

# **EMERGING THREATS: ASSESSING PUBLIC SAFETY AND SECURITY MEASURES AT NUCLEAR POWER FACILITIES**

---

## **HEARING**

BEFORE THE  
**SUBCOMMITTEE ON NATIONAL SECURITY,  
EMERGING THREATS AND INTERNATIONAL  
RELATIONS**  
OF THE  
**COMMITTEE ON  
GOVERNMENT REFORM**  
**HOUSE OF REPRESENTATIVES**  
**ONE HUNDRED EIGHTH CONGRESS**

FIRST SESSION

---

MARCH 10, 2003

---

**Serial No. 108-43**

---

Printed for the use of the Committee on Government Reform



Available via the World Wide Web: <http://www.gpo.gov/congress/house>  
<http://www.house.gov/reform>

---

U.S. GOVERNMENT PRINTING OFFICE  
89-075 PDF

WASHINGTON : 2003

---

For sale by the Superintendent of Documents, U.S. Government Printing Office  
Internet: [bookstore.gpo.gov](http://bookstore.gpo.gov) Phone: toll free (866) 512-1800; DC area (202) 512-1800  
Fax: (202) 512-2250 Mail: Stop SSOP, Washington, DC 20402-0001

COMMITTEE ON GOVERNMENT REFORM

TOM DAVIS, Virginia, *Chairman*

DAN BURTON, Indiana	HENRY A. WAXMAN, California
CHRISTOPHER SHAYS, Connecticut	TOM LANTOS, California
ILEANA ROS-LEHTINEN, Florida	MAJOR R. OWENS, New York
JOHN M. McHUGH, New York	EDOLPHUS TOWNS, New York
JOHN L. MICA, Florida	PAUL E. KANJORSKI, Pennsylvania
MARK E. SOUDER, Indiana	CAROLYN B. MALONEY, New York
STEVEN C. LATOURETTE, Ohio	ELIJAH E. CUMMINGS, Maryland
DOUG OSE, California	DENNIS J. KUCINICH, Ohio
RON LEWIS, Kentucky	DANNY K. DAVIS, Illinois
JO ANN DAVIS, Virginia	JOHN F. TIERNEY, Massachusetts
TODD RUSSELL PLATTS, Pennsylvania	WM. LACY CLAY, Missouri
CHRIS CANNON, Utah	DIANE E. WATSON, California
ADAM H. PUTNAM, Florida	STEPHEN F. LYNCH, Massachusetts
EDWARD L. SCHROCK, Virginia	CHRIS VAN HOLLEN, Maryland
JOHN J. DUNCAN, JR., Tennessee	LINDA T. SANCHEZ, California
JOHN SULLIVAN, Oklahoma	C.A. "DUTCH" RUPPERSBERGER, Maryland
NATHAN DEAL, Georgia	ELEANOR HOLMES NORTON, District of Columbia
CANDICE S. MILLER, Michigan	JIM COOPER, Tennessee
TIM MURPHY, Pennsylvania	CHRIS BELL, Texas
MICHAEL R. TURNER, Ohio	_____
JOHN R. CARTER, Texas	BERNARD SANDERS, Vermont
WILLIAM J. JANKLOW, South Dakota	(Independent)
MARSHA BLACKBURN, Tennessee	

PETER SIRH, *Staff Director*  
MELISSA WOJCIAK, *Deputy Staff Director*  
ROB BORDEN, *Parliamentarian*  
TERESA AUSTIN, *Chief Clerk*  
PHILIP M. SCHILIRO, *Minority Staff Director*

SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS AND INTERNATIONAL RELATIONS

CHRISTOPHER SHAYS, Connecticut, *Chairman*

MICHAEL R. TURNER, Ohio	DENNIS J. KUCINICH, Ohio
DAN BURTON, Indiana	TOM LANTOS, California
STEVEN C. LATOURETTE, Ohio	BERNARD SANDERS, Vermont
RON LEWIS, Kentucky	STEPHEN F. LYNCH, Massachusetts
TODD RUSSELL PLATTS, Pennsylvania	CAROLYN B. MALONEY, New York
ADAM H. PUTNAM, Florida	LINDA T. SANCHEZ, California
EDWARD L. SCHROCK, Virginia	C.A. "DUTCH" RUPPERSBERGER, Maryland
JOHN J. DUNCAN, JR., Tennessee	CHRIS BELL, Texas
TIM MURPHY, Pennsylvania	JOHN F. TIERNEY, Massachusetts
WILLIAM J. JANKLOW, South Dakota	

EX OFFICIO

TOM DAVIS, Virginia	HENRY A. WAXMAN, California
LAWRENCE J. HALLORAN, <i>Staff Director and Counsel</i>	
J. VINCENT CHASE, <i>Chief Investigator</i>	
ROBERT A. BRIGGS, <i>Clerk</i>	
DAVID RAPALLO, <i>Minority Counsel</i>	

## C O N T E N T S

---

	Page
Hearing held on March 10, 2003 .....	1
Statement of:	
Blumenthal, Richard, attorney general, State of Connecticut; John T. Wiltse, director, Office of Emergency Management, State of Connecticut; and Richard Bond, first selectman, town of New Canaan .....	123
Conklin, W. Craig, Technological Services Division, Office of National Preparedness, Emergency Preparedness and Response Directorate, Department of Homeland Security; and Hubert Miller, NRC Region 1 Administrator, Nuclear Regulatory Commission, accompanied by Lawrence Chandler, Associate General Counsel for Hearings, Enforcement and Administration, Nuclear Regulatory Commission .....	67
Wells, Jim, Director, Natural Resources and the Environment, U.S. General Accounting Office; Michael J. Slobodien, director, emergency programs, Entergy Nuclear Operations, Inc.; William F. Renz, director, nuclear protection services and emergency preparedness, Dominion Resources Services, Inc.; Angelina S. Howard, executive vice president, Nuclear Energy Institute; Alex Matthiessen, executive director, Riverkeeper; and David Lochbaum, nuclear safety engineer, Union of Concerned Scientists .....	157
Letters, statements, etc., submitted for the record by:	
Blumenthal, Richard, attorney general, State of Connecticut, prepared statement of .....	126
Bond, Richard, first selectman, town of New Canaan, prepared statement of .....	146
Conklin, W. Craig, Technological Services Division, Office of National Preparedness, Emergency Preparedness and Response Directorate, Department of Homeland Security, prepared statement of .....	71
Howard, Angelina S., executive vice president, Nuclear Energy Institute, prepared statement of .....	197
Kelly, Hon. Sue, a Representative in Congress from the State of New York:	
Followup questions and responses .....	115
Indian Point Emergency Preparedness Independent Expert Task Force report .....	12
Kucinich, Hon. Dennis J., a Representative in Congress from the State of Ohio, prepared statement of .....	7
Lochbaum, David, nuclear safety engineer, Union of Concerned Scientists, prepared statement of .....	278
Matthiessen, Alex, executive director, Riverkeeper, prepared statement of .....	253
Miller, Hubert, NRC Region 1 Administrator, Nuclear Regulatory Commission, prepared statement of .....	88
Renz, William F., director, nuclear protection services and emergency preparedness, Dominion Resources Services, Inc., prepared statement of .....	189
Shays, Hon. Christopher, a Representative in Congress from the State of Connecticut:	
Prepared statement of .....	3
Various prepared statements .....	53
Slobodien, Michael J., director, emergency programs, Entergy Nuclear Operations, Inc., prepared statement of .....	182
Wells, Jim, Director, Natural Resources and the Environment, U.S. General Accounting Office, prepared statement of .....	161

IV

Page

Letters, statements, etc., submitted for the record by—Continued Wiltse, John T., director, Office of Emergency Management, State of Connecticut, prepared statement of .....	133
---	-----

## **EMERGING THREATS: ASSESSING PUBLIC SAFETY AND SECURITY MEASURES AT NUCLEAR POWER FACILITIES**

---

**MONDAY, MARCH 10, 2003**

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING  
THREATS AND INTERNATIONAL RELATIONS,  
COMMITTEE ON GOVERNMENT REFORM,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 2:05 p.m., in room 2154, Rayburn House Office Building, Hon. Christopher Shays (chairman of the subcommittee) presiding.

Present: Representatives Shays, Turner, Janklow, Kucinich and Tierney.

Also present: Representative Kelly.

Staff present: Lawrence Halloran, staff director and counsel; J. Vincent Chase, chief investigator; Robert A. Briggs, clerk; MacKenzie Eaglen, fellow; David Rapallo, minority counsel; and Jean Gosa, minority assistant clerk.

Mr. SHAYS. This hearing entitled, "Assessing Public Safety and Security Measures at Nuclear Facilities," is called to order.

The attacks of September 11, 2001 should have seared this hard truth into our national consciousness: Security is not a state of rest. It is not a static measure. Sanctuary from the terrorists of the 21st century demands a new level of vigilance to protect the public from known and emerging threats.

Heightened awareness of new threats and proactive countermeasures are particularly imperative to protect critical infrastructure facilities, fixed assets of enormous importance to national economic and social well-being. Of those, civilian nuclear power plants stand as highly attractive targets of terrorism.

Today, we ask if Federal regulators are demanding the physical security and preparedness enhancements needed to protect public health and safety from nuclear terrorism. Recent reports suggest the answer may be no. Although specific to the Indian Point reactor complex in Buchanan, NY, observations by the General Accounting Office [GAO], and to a private security firm point to systemic weaknesses in nuclear incident response planning that have implications for every community within 50 miles of any of the Nation's 64 active reactor sites.

A release of radiation caused by terrorists is a unique event, one that requires acknowledgment of the distinct factors and fears that will define the public response to such an incident. Yet the chair-

man of the Nuclear Regulatory Commission [NRC], recently wrote, "Necessary protective actions and response are not predicated on the cause of events."

I disagree. That view overstates the reach of an all-hazards approach to first responder capabilities and ignores the obvious need to accommodate unique causal elements in any effective response scenario. Just as flooded roads will alter an evacuation strategy, transportation routes flooded by the spontaneous evacuation of frightened families will impede response to an attack on a nuclear plant.

One dangerous element not predicated on the cause of an incident, but certainly capable of compounding the negative effects, is poor communication between Federal, State and local officials. County, city and town leaders wait at the far end of a dysfunctional daisy chain of confusing directives from the Federal Emergency Management Agency [FEMA], the NRC and plant operators. In the event of a terrorist attack on a reactor, timely information will be local officials' most potent weapon against the panic and overreach that terrorists hope will drive property damage and loss of life. Emergency response plans and exercises have to include more accurate, more direct communications to local officials and the public.

It is telling, no nuclear plant license has ever been suspended or revoked due solely to weaknesses in emergency response and evacuation planning. Deficiencies can linger for years. Compliance with critical incident response and evacuation planning has been allowed to become a static bureaucratic exercise. That has to change.

If the planning requirement is to be real, not just cosmetic, reasonable assurance a plan protects public health and safety cannot be achieved through paperwork alone. It must be gained through robust exercises and measurable outcomes for which operators are held closely accountable.

We appreciate the testimony of all of our witnesses today, appreciate that they came to Washington to testify before this committee as we continue our examination of terrorism and the protection of critical infrastructure from new threats.

[The prepared statement of Hon. Christopher Shays follows:]

TOM DAVIS, VIRGINIA  
CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA  
RANKING MINORITY MEMBER

ONE HUNDRED EIGHTH CONGRESS  
**Congress of the United States**  
**House of Representatives**

COMMITTEE ON GOVERNMENT REFORM  
 2157 RAYBURN HOUSE OFFICE BUILDING  
 WASHINGTON, DC 20515-6143

Majority (202) 225-5074  
 Minority (202) 225-5051

SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS,  
 AND INTERNATIONAL RELATIONS  
 Christopher Shays, Connecticut  
 Room B-372 Rayburn Building  
 Washington, D.C. 20515  
 Tel: 202 225-2548  
 Fax: 202 225-2362  
 E-mail: hr.govoc@mail.house.gov

**Statement of Rep. Christopher Shays**  
**March 10, 2003**

The attacks of September 11, 2001 should have seared this hard truth into our national consciousness: Security is not a state of rest. It is not a static measure. Sanctuary from the terrors of the 21<sup>st</sup> century demands a new level of vigilance to protect the public from known and emerging threats.

Heightened awareness of new threats, and proactive countermeasures, are particularly imperative to protect critical infrastructure facilities, fixed assets of enormous importance to national economic and social well-being. Of those, civilian nuclear power plants stand as highly attractive targets of terrorism.

Today we ask if federal regulators are demanding the physical security and preparedness enhancements needed to protect public health and safety from nuclear terrorism.

Recent reports suggest the answer may be no. Although specific to the Indian Point reactor complex in Buchanan, New York, observations by the General Accounting Office (GAO) and a private security firm point to systemic weaknesses in nuclear incident response planning that have implications for every community within fifty miles of any of the nation's 64 active reactor sites.

*Statement of Rep. Christopher Shays  
March 10, 2003  
Page 2 of 2*

A release of radiation caused by terrorists is a unique event, one that requires acknowledgement of the distinct factors and fears that will define the public response to such an incident. Yet the Chairman of the Nuclear Regulatory Commission recently wrote, "Necessary protective actions and offsite response are not predicated on the cause of events."

I disagree. That view overstates the reach of an "all hazards" approach to first responder capabilities, and ignores the obvious need to accommodate unique causal elements in any effective response scenario. Just as flooded roads will alter an evacuation strategy, transportation routes flooded by the spontaneous evacuation of frightened families will impede response to an attack on a nuclear plant.

One dangerous element not predicated on the cause of an incident, but certainly capable of compounding the negative effects, is poor communication between federal, state and local officials. County, city and town leaders wait at the far end of a dysfunctional daisy chain of confusing directives from the Federal Emergency Management Agency (FEMA), the NRC, and plant operators. In the event of a terrorist attack on a reactor, accurate, timely information will be local officials' most potent weapon against the panic and over reaction that terrorists hope will drive property damage and loss of life. Emergency response plans and exercises have to include more accurate, more direct communication to local officials and the public.

It is telling no nuclear plant license has ever been suspended or revoked due solely to weaknesses in emergency response and evacuation planning. Deficiencies can linger for years. Compliance with critical incident response and evacuation planning has been allowed to become a static, bureaucratic exercise. That has to change.

If the planning requirement is to be real, not just cosmetic, reasonable assurance a plan protects public health and safety cannot be achieved through paperwork alone. It must be gained through robust exercises and measurable outcomes for which operators are held closely accountable.

We appreciate the testimony of all our witnesses today as we continue our examination of terrorism and the protection of critical infrastructure from new threats.

Mr. SHAYS. At this time, the Chair would invite Mr. Kucinich, the ranking member of this committee, to make a comment.

Mr. KUCINICH. Good afternoon. Welcome to our distinguished witnesses. Glad you could be with the committee today.

Mr. Chairman, I want to thank you for your ongoing interest in the security of this country's nuclear power plants. It is certainly one of America's most critical homeland security priorities. The administration knows this. Indeed, in the 2002 State of the Union Address, the President warned that nuclear facilities could be attacked and with dire consequences. The President asserted that U.S. forces found diagrams of American nuclear power plants, in the caves of Afghanistan.

On December 12th of last year, the administration was supposed to submit to Congress a report on the best way to efficiently and safely provide potassium iodide to communities surrounding nuclear power plants in the event of an attack. Potassium iodide is a very cheap, widely available tablet that can prevent fatal thyroid illness caused by radiation exposure. We have seen no sign of the report. We required the report, because prior to September 11, there was no comprehensive plan to buy potassium iodide and distribute it to local communities.

Before September 11, the nuclear utility industry lobbied against such measures because they feared people would become alarmed about the dangers of nuclear power. After September 11, however, it became clear that nuclear power facilities are indeed likely targets. After September 11, the Nuclear Regulatory Commission recommended that States consider including potassium iodide in their emergency evacuation plans. The NRC offered to buy potassium iodide so States could cover a 10-mile radius surrounding nuclear power plants.

Anyone with a knowledge of past incidents, such as Three Mile Island and Chernobyl, would acknowledge that 10 miles is a very modest step. Many of us in Congress believe the NRC did not go far enough. For this reason, Congress expanded this to a 20-mile radius as part of the bill we passed last June. We also gave local government greater flexibility to obtain potassium iodide when State governments failed to do so.

To ensure that the administration would purchase the potassium iodide, distribute it and administer it in the most effective manner possible, we also mandated the report I described, which was to be conducted in conjunction with the National Academy of Sciences that was due in December. Here we are 3 months later and still no report. Apparently no one in the administration even allocated funding for this report until after it was due. It appears the administration hasn't even contacted the National Academy of Sciences to contract for the study. Eight months of inaction. Last week we were told that someone in the administration finally wrote a memo to the National Academy asking them to begin work, but they are just now appointing the panelists who will begin to study this issue.

How could the administration so completely ignore a directive of Congress? More importantly, how could they ignore this critical issue and the families living in neighborhoods where the nuclear power plants are located? Perhaps it is because the homeland secu-

rity apparatus is in disarray? Clearly the new Department is not yet operating coherently, and now that Governor Ridge has left the White House, President Bush has failed to appoint a successor, so nobody has assumed the responsibilities of cross-agency issues such as this one.

Maybe this has just fallen through the cracks, or maybe it is because the administration's focus is entirely on Iraq. Maybe this is just one more example of tunnel vision diverting attention away from severe threats here at home, or perhaps the administration is relying on the industry to do the right thing as it has in many other cases.

Industry officials have stated publicly they believe nuclear power plants are overly defended, but an NRC review of force-on-force exercises demonstrates precisely the opposite. NRC officials found significant weakness in armed responses in 37 of 81 mock attacks, or 46 percent of the time. The NRC concluded that these mock attackers would have been able to cause core damage, and in many cases a probable radioactive release.

Whatever the reason for the inaction, the administration's conduct is not acceptable. The administration promised to make homeland security a top priority. After September 11, we cannot leave critical homeland security matters, such as the safety of our nuclear power plants, to the industry, and we cannot let these critical items slip through the cracks or be ignored.

It is important that our Chair has called this meeting, and I want to thank him for doing so. I think that we need to have action taken, and to begin immediately. I want to thank the Chair.

Mr. SHAYS. Thank the gentleman.

[The prepared statement of Hon. Dennis J. Kucinich follows:]

**Opening Statement  
Representative Dennis J. Kucinich**

**Ranking Member  
Subcommittee on National Security,  
Emerging Threats, and International Relations**

March 10, 2003

---

GOOD AFTERNOON. LET ME WELCOME OUR DISTINGUISHED WITNESSES. I AM GLAD YOU COULD BE WITH US TODAY. MR. CHAIRMAN, THE SECURITY OF THIS COUNTRY'S NUCLEAR POWER PLANTS IS ONE OF AMERICA'S MOST CRITICAL HOMELAND SECURITY PRIORITIES.

THE BUSH ADMINISTRATION KNOWS THIS. INDEED, IN HIS 2002 STATE OF THE UNION ADDRESS, PRESIDENT BUSH WARNED THAT NUCLEAR FACILITIES COULD BE ATTACKED BY TERRORISTS, AND WITH DIRE CONSEQUENCES. HE EVEN REVEALED THAT U.S. FORCES FOUND "DIAGRAMS OF AMERICAN NUCLEAR POWER PLANTS" IN THE CAVES OF AFGHANISTAN.

SO I DON'T UNDERSTAND WHY THE ADMINISTRATION SEEMS TO HAVE DROPPED THE BALL ON THIS ISSUE. ON DECEMBER 12 OF LAST YEAR, THE PRESIDENT WAS SUPPOSED TO SUBMIT TO CONGRESS A REPORT ON THE BEST WAY TO EFFICIENTLY AND SAFELY PROVIDE POTASSIUM IODIDE TO COMMUNITIES SURROUNDING NUCLEAR POWER PLANTS IN THE EVENT OF A TERRORIST ATTACK. POTASSIUM IODIDE IS A VERY CHEAP, WIDELY AVAILABLE TABLET THAT CAN PREVENT FATAL THYROID ILLNESSES CAUSED BY RADIATION EXPOSURE.

UNFORTUNATELY, WE HAVE SEEN NO SIGN OF THE REPORT. WE REQUIRED THE REPORT BECAUSE PRIOR TO SEPTEMBER 11, THERE WAS NO COMPREHENSIVE PLAN TO BUY POTASSIUM IODIDE AND DISTRIBUTE IT TO LOCAL COMMUNITIES. BEFORE 9-11, THE NUCLEAR UTILITY INDUSTRY LOBBIED AGAINST SUCH MEASURES BECAUSE THEY FEARED PEOPLE WOULD BECOME ALARMED ABOUT THE DANGERS OF NUCLEAR POWER.

AFTER 9-11, HOWEVER, IT BECAME CLEAR THAT NUCLEAR POWER FACILITIES ARE INDEED LIKELY TARGETS FOR TERRORISTS. AFTER 9-11, THE NUCLEAR REGULATORY COMMISSION RECOMMENDED THAT STATES CONSIDER INCLUDING POTASSIUM IODIDE IN THEIR EMERGENCY EVACUATION PLANS. THE N.R.C. OFFERED TO BUY POTASSIUM IODIDE SO STATES COULD COVER A TEN MILE RADIUS SURROUNDING NUCLEAR POWER PLANTS.

BUT ANYONE WITH KNOWLEDGE OF PAST INCIDENTS, SUCH AS THREE-MILE ISLAND AND CHERNOBYL, WOULD ACKNOWLEDGE THAT TEN MILES IS A VERY, VERY MODEST STEP. MANY OF US IN CONGRESS BELIEVED THE N.R.C. DID NOT GO FAR ENOUGH. FOR THIS REASON, CONGRESS EXPANDED THIS TO A 20-MILE RADIUS AS PART OF THE BIOTERRORISM BILL WE PASSED LAST JUNE. WE ALSO GAVE LOCAL GOVERNMENTS GREATER FLEXIBILITY TO OBTAIN POTASSIUM IODIDE WHEN STATE GOVERNMENTS FAILED TO DO SO.

TO ENSURE THAT THE BUSH ADMINISTRATION WOULD PURCHASE THE POTASSIUM IODIDE, DISTRIBUTE IT, AND ADMINISTER IT IN THE MOST EFFECTIVE MANNER POSSIBLE, WE ALSO MANDATED THE REPORT I DESCRIBED, WHICH WAS TO BE CONDUCTED IN CONJUNCTION WITH THE

NATIONAL ACADEMY OF SCIENCES. AS I SAID, IT WAS DUE IN DECEMBER.  
HERE WE ARE, THREE MONTHS LATER -- AND STILL NO REPORT.

IT GETS WORSE. APPARENTLY, NOBODY IN THE ADMINISTRATION  
EVEN ALLOCATED FUNDING FOR THIS REPORT UNTIL AFTER IT WAS DUE.  
IT APPEARS THE ADMINISTRATION HADN'T EVEN CONTACTED THE  
NATIONAL ACADEMY OF SCIENCES TO CONTRACT FOR THE STUDY.  
THAT'S OVER EIGHT MONTHS OF INACTION.

LAST WEEK, WE WERE TOLD THAT SOMEONE IN THE  
ADMINISTRATION FINALLY WROTE A MEMO TO THE NATIONAL ACADEMY  
ASKING THEM TO BEGIN WORK. BUT THEY ARE JUST NOW APPOINTING  
THE PANELISTS WHO WILL BEGIN TO STUDY THIS ISSUE.

THIS IS OUTRAGEOUS. WHAT IS GOING ON? HOW COULD THE BUSH  
ADMINISTRATION SO COMPLETELY IGNORE CONGRESS? MORE  
IMPORTANTLY, HOW COULD THEY IGNORE THIS CRITICAL ISSUE AND THE  
FAMILIES LIVING IN NEIGHBORHOODS WHERE THESE NUCLEAR POWER  
PLANTS ARE LOCATED? WE CAN ONLY SPECULATE.

PERHAPS IT IS BECAUSE THE ADMINISTRATION'S HOMELAND  
SECURITY APPARATUS IS IN DISARRAY. CLEARLY, THE NEW DEPARTMENT  
IS NOT YET OPERATING COHERENTLY. AND NOW THAT GOVERNOR RIDGE  
HAS LEFT THE WHITE HOUSE, PRESIDENT BUSH HAS FAILED TO APPOINT A  
SUCCESSOR, SO NOBODY HAS ASSUMED THE RESPONSIBILITIES OF CROSS-  
AGENCY ISSUES, SUCH AS THIS ONE. MAYBE THIS JUST FELL THROUGH  
THE CRACKS.

OR, PERHAPS IT'S BECAUSE THE ADMINISTRATION'S FOCUS IS ENTIRELY ON IRAQ. MAYBE THIS IS JUST ONE MORE EXAMPLE OF THE ADMINISTRATION'S COUNTER-PRODUCTIVE TUNNEL-VISION DIVERTING ATTENTION AWAY FROM SEVERE THREATS HERE AT HOME.

OR, PERHAPS THE ADMINISTRATION IS RELYING ON INDUSTRY TO DO THE RIGHT THING, AS IT HAS IN SO MANY OTHER CASES. INDUSTRY OFFICIALS HAVE STATED PUBLICLY THAT THEY BELIEVE NUCLEAR PLANTS ARE "OVERLY DEFENDED." BUT AN N.R.C. REVIEW OF FORCE-ON-FORCE EXERCISES DEMONSTRATES PRECISELY THE OPPOSITE. N.R.C. OFFICIALS FOUND "SIGNIFICANT WEAKNESSES" IN ARMED RESPONSES IN 37 OUT OF 81 MOCK ATTACKS — OR 46% OF THE TIME. THE N.R.C. CONCLUDED THAT THESE MOCK ATTACKERS WOULD HAVE BEEN ABLE TO CAUSE "CORE DAMAGE AND IN MANY CASES . . . A PROBABLE RADIOACTIVE RELEASE."

WHATEVER THE REASON FOR ITS INACTION, THE ADMINISTRATION'S CONDUCT IS UNACCEPTABLE. PRESIDENT BUSH PROMISED TO MAKE HOMELAND SECURITY HIS TOP PRIORITY. AFTER SEPTEMBER 11, WE CAN NO LONGER LEAVE CRITICAL HOMELAND SECURITY ITEMS — LIKE THE SAFETY OF OUR NUCLEAR POWER PLANTS — TO INDUSTRY. WE CAN NO LONGER AFFORD TO LET THESE CRITICAL ITEMS SLIP THROUGH THE CRACKS OR BE IGNORED. THE ADMINISTRATION MUST TAKE RESPONSIBILITY, AND IT MUST DO SO IMMEDIATELY.

THANK YOU, MR. CHAIRMAN.

Mr. SHAYS. At this time the gentleman would recognize the vice chair of the committee, Mr. Michael Turner.

Mr. TURNER. No statement.

Mr. SHAYS. Mr. Janklow, do you have any comments?

Mr. JANKLOW. No, sir. I would rather hear the witnesses.

Mr. SHAYS. We will do that. Let me welcome and ask unanimous consent that our colleague Sue Kelly be allowed to participate in this hearing. She is a member of the Transportation Committee as well as Financial Services, and is the vice chair of that committee. We welcome you here.

She, like a number in the United States, has a plant in her district and has some expertise in this issue.

Would you like to make an opening statement, Mrs. Kelly?

Mrs. KELLY. Thank you, Mr. Chairman. I want to express my thanks to both you and Mr. Kucinich for holding their hearing today. It addresses some issues that are on the minds of many Americans as we confront the challenges that are associated with the war on terror.

The hearing addresses some matters of particular significance to many of my constituents because they live within the radius of the Indian Point Nuclear Plant, which is in my district in Buchanan, NY. So it is a good thing the hearing will include witnesses who can speak directly to some of their concerns.

The hearing is also beneficial in providing a followup to a hearing that we held 2 weeks ago in the Transportation and Infrastructure Committee, which examined some of the problems with Indian Point's emergency plans and the Federal Government's inadequate attempts to resolve them.

I said 2 weeks ago and I will say again today that FEMA has to respond to our local officials and to the issues that were recently raised by the report released by the former FEMA Administrator, James Lee Witt, which concluded that the current emergency plans for Indian Point were inadequate to protect public safety.

[The information referred to follows:]

**Indian Point Emergency Preparedness**

**Independent Expert Task Force**

Comments on the Draft Report:

Review of Emergency Preparedness  
at Indian Point and Millstone

James Lee Witt and Associates, LLC  
January 10, 2003

Prepared for

**Entergy Nuclear Operations, Inc.**

**February 7, 2003**

**IETF Comments on the Draft Report:**

**Review of Emergency Preparedness at Indian Point and Millstone**

**Table of Contents**

1	INTRODUCTION AND BACKGROUND.....	2
2	IETF COMMENTS, IN OVERVIEW .....	3
3	IETF COMMENTS ON WITT REPORT KEY POINTS .....	4
3.1	THE CHALLENGES OF PUBLIC PROTECTION .....	4
3.2	SPECIFIC SHORTCOMINGS IN CURRENT EMERGENCY MANAGEMENT PROCESSES.....	5
3.3	IMPLICATIONS OF HIGH-DENSITY POPULATION.....	6
3.4	INCREASED THREAT DUE TO TERRORISM.....	7
3.5	ADEQUACY OF CURRENT EMERGENCY MANAGEMENT PROCESSES .....	9
4	IETF COMMENTS ON WITT REPORT RECOMMENDATIONS .....	11
4.1	POINTS OF AGREEMENT .....	11
4.2	COMMENTS ON KEY WITT REPORT RECOMMENDATIONS .....	12
5	IETF CONCLUSIONS AND RECOMMENDATIONS.....	15
	REFERENCES.....	16
	APPENDICES .....	18
	APPENDIX A: IETF CURRICULA VITAE .....	18
	APPENDIX B: EM TREATMENT OF PUBLIC PROTECTION CHALLENGES.....	24
	APPENDIX C: RELEASE THREATS DUE TO TERRORISM .....	25
	APPENDIX D: BEHAVIORAL ISSUES EVALUATION .....	32

## **1 Introduction and Background**

The firm of James Lee Witt and Associates, LLC (JLWA) recently conducted, for the New York Power Authority, an independent assessment of emergency preparedness of the New York communities around the Indian Point Energy Center (“Indian Point”) and the Millstone Nuclear Power Station (“Millstone”)<sup>1</sup>. The report of this work, entitled Review of Emergency Preparedness at Indian Point and Millstone (and referred to herein as the “draft Witt Report”) was issued in draft form on January 10, 2003.

As described in the draft Witt Report, the purpose of the effort was “to assess the ability of emergency management systems to protect the health and safety of the New York citizens living around Indian Point and Millstone in the event of a radioactive release”. The draft Witt Report also includes “recommendations for improvement in the emergency management systems for each site”.

In light of the importance of this subject, Entergy Nuclear Operations, Inc. has assembled an **Emergency Preparedness Independent Expert Task Force** to review thoroughly and provide comments on the draft report, particularly in those aspects relating to Indian Point. Appendix A lists the members of the Task Force (or “IETF”) and summarizes their credentials. As evidenced in Appendix A, the IETF embodies extensive, in-depth experience and expertise in virtually every aspect of emergency management.

This report presents, in summary fashion, our assessment of the draft Witt Report, including its structure and logic, findings, conclusions and recommendations. In our review, we interacted with Entergy personnel, but this report reflects solely the views and conclusions of our IETF members. Our intent in this initial report is to provide clear and concise feedback on the key points covered in the draft Witt Report, in time for them to be taken into account by the JLWA team in finalizing their report. Entergy has also requested that the IETF prepare a more detailed follow-up report, addressing a full range of topics germane to emergency management effectiveness at Indian Point. That effort is in progress and will be reported in several months.

Based on our review, the IETF stands in fundamental disagreement with the primary findings of the draft Witt Report. At the same time, we acknowledge its value in presenting many specific observations regarding emergency management processes, and we agree with a number of its recommended actions. We recognize the importance, sensitivity, and broad interest in this issue to all stakeholders, and we submit this report in the spirit of constructive contribution to those with responsibility for policy making in the emergency management arena.

---

<sup>1</sup> Millstone is located in Connecticut, but some portions of Long Island NY are within Millstone’s 10-mile emergency planning zone (EPZ).

## **2 IETF Comments, in Overview**

The draft Witt Report is a 500+ page treatise on virtually all elements of emergency management at the state, county, municipality and operating company level. Not surprisingly for an assessment of such sweeping scope, it has sparked controversy and disagreement on numerous specific points. Beyond that, however, our IETF found the draft Witt Report to be fundamentally flawed in several important respects, and therefore we do not consider it to be a valid basis, in its current form, for decision-making.

The draft Witt Report's most serious flaw is that it draws conclusions, on matters of great importance, with little apparent basis other than the opinions of its (unnamed) authors. As an example, it asserts that a terrorist-caused radiation release at Indian Point would likely be worse in magnitude and timing than that caused by accidents previously considered in safety and risk assessments of the plant. And it compounds that error by asserting that the emergency management process does not accommodate the consequences of such terrorist-caused events. Both assertions are presented without reference, basis or explanation – and, in fact, both are incorrect (as explained more fully in Section 3.4 of this report).

Similarly, the draft Witt Report's main conclusion – that “*current radiological response system and capabilities are not adequate to ... protect the people from an unacceptable dose of radiation in the event of a release from Indian Point*”<sup>2</sup> – is attributed to the “combined weight” [page viii and page 240] of the various individual challenges and emergency management shortcomings identified throughout the report. There is no supporting analysis or explanation of the supposedly debilitating synergistic effect of these individual – and in many cases separable – factors. Further, this conclusion ignores the large body of contrary information and experience in real emergencies of all kinds, and it contradicts consistent findings of emergency preparedness experts and responsible public officials. (This point is discussed more fully in Section 3.5 of this report.)

The report in its current draft form is simply not – in our view – a sound and professional product. It is wrong on the facts in some important areas. Many references are incomplete or incorrect. It is redundant on some points and on others internally inconsistent. It presents recommendations that in some cases are vague, unsupported or premature, and that in some important respects contradict widely-held practices and principles of emergency management. Examples of all of these are presented throughout this document.

Finally, we consider the draft Witt Report to be misleading in that it provides no perspective on the relative significance (or insignificance) of the various points raised, or on the very low risk to public health and safety posed by Indian Point, even with full consideration of the issues raised therein.

---

<sup>2</sup> As a convention throughout this report, verbatim statements from the Witt Report are italicized and indicated by quotation marks, followed by specific reference in brackets.

### **3 IETF Comments on Witt Report Key Points**

The following are IETF comments, with summary conclusions in each case, on the main topics of the draft Witt Report:

#### **3.1 The Challenges of Public Protection**

The draft Witt Report identifies and discusses the many challenges related to protecting the public, implying that these are extraordinary and perhaps intractable. Specific examples include:

- Likelihood that some members of the public won't follow direction during an emergency (e.g., parental interference with the school evacuation process) *[pages vi and viii]*
- Difficulties in communications, particularly with non-English speaking persons *[pages viii and 230]*
- Lack of first responder confidence in the emergency plans *[page viii]*
- Problems caused by spontaneous and/or shadow evacuations *[pages vi and viii]*
- Road system limitations (potentially compounded by weather, construction, etc. *[page viii]*)
- Poor public understanding of emergency management processes and their roles and responsibilities *[page iv]*
- Large and varying daytime transient population *[page 79]*

We agree that these are tough, real-world challenges. But they are not unique to Indian Point. All come into play, to some extent, in all emergency management applications, including industrial accidents, natural disasters, and sabotage/terrorism events. In effect, they define the job of emergency management, and they are dealt with by emergency planners everywhere.

Appendix B is a tabular summary of specific, documented treatments of the above-listed challenges, in a variety of emergency management applications. This large body of experience and study – and common sense – tells us that the public protection challenges cited by the draft Witt Report are neither unusual nor unmanageable. If they were, emergency preparedness would be an impossible goal anywhere, in any application. Clearly that is not the case.

**IETF Conclusion:**

There is nothing new here and nothing to suggest that sound, established emergency management processes cannot provide the requisite level of protection required for people in New York, in the Indian Point area.

### **3.2 Specific Shortcomings in Current Emergency Management Processes**

The bulk of the draft Witt Report is an extensive description and assessment of the emergency management process, including plans, procedures and methods at the state, county, municipality and utility-owner level. The report raises various questions, potential issues, and areas of needed improvement and offers numerous conclusions and recommendations.

Despite its evident value as an evaluation tool, we find that the draft Witt Report in this area is in many respects misleading or incorrect, as follows:

- The report provides little perspective on issues. It does not distinguish between fundamental problems and relatively minor discrepancies, nor does it properly characterize most of its findings as part of the continuum of evaluation and improvement to which emergency management processes are subjected. As one example, it implies *[page 209]* that the potential for some individuals to be occasionally out of earshot of sirens or tone-alert radios is a significant deficiency in the emergency notification system. This is not the case, and in fact the draft Witt Report itself points out that *"the siren coverage requirements of FEMA are indeed being satisfactorily met by the Alert and Notification Plan at Indian Point."* *[page 110]*.
- There are numerous, significant errors of fact in the draft Witt Report regarding emergency management processes. As examples:
  - Contrary to the report assertion *[page x]*, plastic map overlays are not the primary means for determining the area at risk during radiation release conditions. This process is computerized, using state-of the art methods, including transfer of information to state and county response organizations. The overlays and associated hand calculations are used as a check on the computerized calculation and also serve as an independent back-up method.
  - The Draft Witt Report asserts *[page 185]* that the Indian Point emergency plan exercise program has not addressed a *"fast-evolving accident"* (i.e., one with radiological consequences to the population in less than six hours from initiation) in the last seven years (1996 to 2002). This is not correct. In fact, in the last two years nearly all Indian Point exercises use scenarios with significant offsite radiological consequences starting sooner than six hours.
- The draft Witt Report seems not to recognize that nuclear plant emergency management processes are largely based on experience in actual emergency events at nuclear and other facilities, or that they are prescribed by regulatory requirements at the state and federal level (including those set by FEMA). The report criticizes methods that have proven effective and that are endorsed or

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

currently required. Again, an example is its assertion [page 13] of “*over-reliance on out-dated sirens and the Emergency Alert System*” and that “*More and better means of reaching and warning people are needed*” [page 209]. The existing siren warning system, with EAS for follow-up warning is an established, regulatory and compliant process.

**IETF Conclusion:**

The draft Witt Report alleges many specific shortcomings in the processes used by state, county, municipality and plant management in dealing with emergencies at Indian Point. Some of these are valid, some not. Many are minor, and the report provides no perspective as to their relative importance.

Many of these observations merit consideration, but they do not form the basis for sweeping conclusions regarding emergency management effectiveness in protecting the public.

### **3.3 Implications of High-density Population**

The draft Witt Report argues that nuclear plants (such as Indian Point) “*adjacent to high population areas should have different requirements than plants otherwise situated, because protective actions are more difficult and the consequences of failure or delay are higher*” [pages vii, viii and 240]. The report fails to provide evidence or support for this conclusion.

The logical implication of this assertion is that emergency management processes and requirements are generic and are not configured to accommodate plants with high population densities. That is not the case. Planning for nuclear power plant emergencies is plant specific, and is explicitly mandated to consider population density and other location-specific parameters. The Indian Point plans have taken relevant considerations into account including population distribution, transportation infrastructure, topography and other factors. Thus, the requirements for Indian Point emergency management are in fact “*different ...than plants otherwise situated*”, just as the draft Witt Report recommends.

Further, the report concurs with the Indian Point treatment of population. Specifically, the report finds that:

- Population estimates used in planning at Indian Point were reasonable [page D-9].
- Alert notification systems met noise levels required for given population densities [page 10].
- The population assumptions used in evacuation time estimates were valid [page 95].

We note also that the draft Witt Report’s general assumption regarding the adverse effects of higher population – while perhaps intuitive – is not necessarily correct. In particular, it fails to reflect that emergency response resources co-vary with

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

population density. Plant sites with higher populations also have more transportation resources, emergency responders, and emergency system infrastructure resources.

As a practical example, the time it takes to evacuate an area is not solely a function of the number of people evacuated. As the density of population in an area increases the capacity of the road network also increases [1]. Since higher-density population areas have more response resources than areas with lower-population densities, it is not unreasonable to expect comparable response. Also, communities with larger populations are more likely to be innovators in adopting new emergency practices [2]

**IETF Conclusion:**

The emergency management regulatory requirements and processes currently in place in the areas around Indian Point already take into account the high population density in that area.

### **3.4 Increased Threat due to Terrorism**

Although not mentioned in the stated purpose of the draft Witt Report, it is clear that the underlying context of the JLWA assessment is the implicit threat of terrorism, post September 11. It is also clear that its assumptions regarding the potential consequences of a terrorist-induced radiological release at Indian Point had strong bearing on the report's conclusions.

The report's conclusions in this area are rooted in two premises: (1) the consequences of a terrorist-induced accident at a nuclear plant are unique, and (2) existing Indian Point emergency planning does not accommodate the ramifications of a terrorist-caused release. Neither is correct, as explained in the following sections.

**Consequences of Terrorist-induced Event:**

The assumption that the consequences of a radionuclide release caused by terrorist action are unique [*pages vii and 240*] is not correct. From a technical standpoint, there is no difference in the magnitude and timing of radionuclide releases from accidental core damage events (i.e., core damage events caused by accidental equipment failure and/or human error) which are the basis for existing emergency planning, and the magnitude and timing of radionuclide releases from terrorist-induced core damage events. Since existing emergency planning considers very severe accidents, including large-break loss of coolant accidents and impaired containment, this is the case even for extreme terrorist-induced events.

Further, there has been a great deal of evaluation of the post 9/11 terrorist threat and its implications on nuclear safety. The IETF reviewed two recent studies on the consequences of terrorist attacks on nuclear plants [3, 4]. These studies conclude that:

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

- The risk to the public resulting from a core damage event caused by an armed terrorist ground attack on a U.S. commercial nuclear power plant is small, and less than the risk from accidental core damage events postulated for U.S. commercial nuclear plants.
- Given an armed terrorist ground attack, core damage is unlikely because of nuclear plant owner capabilities to detect insider activities, to physically deter the attackers, and to mitigate accident propagation with operator actions and safety systems. The likelihood of severe release is further reduced by the inherent strength of containment and radioactivity removal capabilities of the containment and safety systems.
- A direct hit on a nuclear plant containment by a large, fully loaded commercial aircraft would not breach the containment structure, and thus the reactor fuel would be protected. Similarly, a direct aircraft hit on spent fuel storage structures would not cause breach.
- Because of their very strong and effective security systems, safety systems, and containment structures, and the attendant likelihood that the health consequences of a terrorist-induced event would be relatively minor, commercial nuclear plants are considered unattractive targets for terrorist groups intent on causing loss of life.

Based on a comparison of the reference [3] and [4] results with those from probabilistic risk assessments (PRAs) performed for U.S. operating nuclear plants over the last 15 years [5], it is clear that the consequences of terrorist-induced core damage events would be no greater than consequences from accidental core damage events.

Emergency Plan Treatment of Terrorist-Caused Events

Contrary to draft Witt Report assertions, existing emergency plans do in fact address potential impacts of a terrorist event. Therefore, emergency plan annexes or other separate consideration of terrorist-caused releases, as recommended by the report [page ix] are unnecessary. Consider the following:

- Nuclear Regulatory Commission (NRC) emergency planning guidance is based on a spectrum of accident types, including accidents with large, rapid release as well as slower accidents. These accidents envelop those from terrorist-induced events, as explained above.
- Emergency planning is driven by the consequences, not the cause of an event. Plant events such as loss-of-coolant accidents are all treated in essentially the same manner, regardless of whether they are caused by external forces (earthquakes, tornadoes, etc.), human error, equipment failure, sabotage, etc.

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

- Existing emergency plans, at the county level, methodically address impediments to evacuation, regardless of cause, including terrorist events.
- The draft Witt Report asserts [page 185] that the Indian Point emergency plan exercise program has not addressed a “fast-evolving accident” (i.e., release within six hours). In fact, nearly all Indian Point exercises in the last two years employed scenarios with offsite radiological consequences beginning sooner than six hours.

**IETF Conclusion:**

The draft Witt Report underlying assumption that a terrorist-caused radiation release at Indian Point would be more severe in magnitude and timing than that for which the emergency management process is designed is not correct. Emergency management processes accommodate radiation releases regardless of source or cause.

Appendix C discusses the draft Witt Report treatment of terrorist-related events in more detail.

### 3.5 Adequacy of Current Emergency Management Processes

In its single most important conclusion, the draft Witt Report finds that, with respect to the factors discussed in sections 3.1 through 3.4 above, “*current radiological response system and capabilities are not adequate to overcome their combined weight* (emphasis added) and protect the people from an unacceptable dose of radiation in the event of a release from Indian Point [pages viii and 240].”

This conclusion is wholly unsupported by the balance of the report. It does not stem logically from the information presented on the alleged contributing factors, and the authors’ assertion that their “combined weight” somehow renders the entire process ineffective is not explained in any way. It is a conclusion that ignores the large body of information and experience in real emergencies of all kinds, and it contradicts consistent findings of emergency preparedness experts and responsible public officials.

We know from real life experience, and particularly from non-nuclear emergencies that have occurred within the nuclear plant emergency planning zones, that nuclear plant emergency planning processes do work. Two specific examples are:

- Plans developed for the Waterford Plant were used to successfully warn and evacuate residents of Taft, LA, following a chemical plant accident [20]. This event was acknowledged in the draft Witt Report [page 241]
- Following a fire at a metal processing plant in Nanticoke, PA, local officials used procedures developed for the Susquehanna Nuclear Station to conduct a successful warning and night-time evacuation. [21]

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

Emergency planning for nuclear plants is in the vanguard practice in the US, for protection from all threats, as demonstrated by the CAR (Capability Assessment for Readiness) conducted by FEMA, which concluded that "Overall, States participating in the REP Program score higher above the national average in all functional areas." [18, p. 122]

**IETF Conclusion:**

There is simply no basis for the draft Witt Report conclusion that the emergency management processes currently in place are inadequate to protect public health and safety.

#### **4 IETF Comments on Witt Report Recommendations**

There are recommendations throughout the draft Witt Report. Many, not all, are restated in Section 11. The recommendations are not prioritized, and none is described as (nor do we consider any to be) central to emergency management success.

Some of the report's recommendations are based on incorrect or unconfirmed assumptions. Many are vague or conceptual and some counter established practice and experience. In such cases, substantial further evaluation and development is warranted before they could be adopted.

In other areas, we agree that the recommended actions have merit and should be considered, and acted upon as appropriate.

##### **4.1 Points of Agreement**

Included in the draft Witt Report are recommendations regarding areas in which the emergency management planning and processes are frequently updated. In some of these cases, we understand that the actions recommended by the draft Witt Report had previously been identified and are already being implemented; others are attractive in concept and are expected to be evaluated. Examples are:

- Incorporation of new technologies, such as reverse 911 and GPS, to enhance emergency response
- Adjustment of siren noise levels consistent with terrain and background
- Mutual aid agreements between counties and support agencies and organizations
- Improvement in public education and outreach activities
- Upgrading Emergency Operations Centers and technology supports for protective actions
- Involvement of cities and counties, in response planning, training, and exercises
- Improvements in methods and equipment for communications with state and counties. Development of methods to accommodate communication failures such as destruction of hardware, network jamming, computer system hijacking, and weak signals
- Inclusion of large employers in emergency planning
- Development of sound processes for use of stable iodine as a prophylactic for radioiodine uptake
- Use of traffic simulation models, with inclusion of population variations including transients
- Inclusion of shadow evacuations in the exercise system
- Improvement in a comprehensive training program including certification of some key positions involved in response
- Regular feedback from the IP emergency response community to professional organizations such as APCO

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

- Use of improved plume modeling and related hazard assessment, taking into account wind shifts and complex weather patterns

#### **4.2 Comments on Key Witt Report Recommendations**

The following are IETF comments on draft recommendations that we consider to be of particular significance:

1. Draft Witt Report recommendations that exercises should be “performance outcome-based”:

As stated, “*The State should work with FEMA and others to develop a performance outcome-based exercise program distinctly different from the functional exercise approach. A functional approach examines each activity against regulations, guidance, or plans and looks for compliance. An outcome-based approach looks for the effects of the actions on the community*”. [page ix, and subsequent]

We concur that that emergency preparedness exercises should include performance outcome assessment along with appropriate compliance measures. The exercise outcome of primary importance is the protection of public health and safety, and exercises should be conducted and assessed in a way demonstrates achievement of that objective.

This performance outcome philosophy is already being implemented. Over a year ago, FEMA incorporated this approach in its new process for grading nuclear plant exercises. FEMA now uses six evaluation areas instead the 33 objectives utilized previously. In accordance with the REP Program Manual, the new evaluation areas, “...reflect FEMA’s shift towards a more ‘results oriented’ approach to the evaluation process. In other words, the accomplishment of the mission (result) is more important than the means used to achieve the result.” [18, page iii-59]. IPEC and off-site authorities were evaluated against these new performance-based criteria during the September 24, 2002 FEMA Exercise.

This process is likely to see ongoing refinement and improvement. Full implementation of a fundamentally different exercise process will take time and will require development, testing and training. Emergency exercises for all nuclear plants currently follow federal regulations and guidelines and should be continued until a new process is ready for implementation.

2. Draft Witt Report recommendation that Emergency Plans should take into account realistic behavior assumptions

As stated: “*The current planning assumption, that the public will not act in ways that will compromise the effectiveness of the response, can lead to serious*

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

*miscalculations. Planning, response, and public education all need to take into account the general findings of disaster researchers on how people behave during emergencies as well as specific findings from the region on the expected actions and intentions of the people living and working around both nuclear facilities, both within and outside of the 10 mile EPZ".[page 225]*

We agree that plans should be based on realistic behavioral assumptions and should take into account findings from disaster research. However, we note that behavioral intent studies have proven to be of limited use, because individuals' perceptions of what they would do in an emergency situation may differ considerably from their actual behavior in that situation, for a variety of reasons. Appendix D is a tabular summary of behavioral issues raised by the draft Witt Report, and the IETF comments on each.

Note also that rigid public conformance with protective action directions is not essential for an effective nuclear plant emergency response. These directions are conservative in nature, and in most cases variations in individual response would have little health consequence.

3. Draft Witt Report recommendation to improve public outreach

The report finds that "*A comprehensive public outreach strategy should be put in place to better educate all sectors of the public on their role in emergency response plans.*"[page 222]

We concur that public education is a foundation for facilitating effective public response. This is, and will continue to be, an area of sharp focus and continuing improvement at Indian Point.

A number of specific recommendations are offered in the draft Witt Report regarding public outreach. We recommend that these be evaluated for inclusion in the ongoing efforts to improve public outreach in the Indian Point EPZ.

4. Draft Witt Report suggestion regarding event-specific protective action strategies

While not presented as an explicit recommendation, the draft Witt Report argues that many case-specific protective action strategies be developed and incorporated into the Indian Point emergency management processes. Excerpts from the report in this area include: "*Safety requires the right actions at the right time. Each radiological emergency can have unique aspects – the accident can be different, weather can be different, time of day and hence patterns of population distribution. ... Humans cannot process the hundreds of variations and arrive at the best strategy. However computers can ... Indian Point and Millstone need to develop a series of protective action strategies for varying contingencies. In our experience...several million simulations had to be run..."*[pages 212 and 213]

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

Interestingly, the draft Witt Report seems to contradict this recommendation, at least in part, in the next paragraph, stating that having these strategies “*does not mean their automatic application in a real event*” and that even when the strategy assumptions “*precisely match the real world conditions*” they “*should be reviewed by decision makers prior to application*”.

IETF disagrees with the suggested approach. Use of tailored, complex protection strategy is incompatible, in our view, with the practical realities of real-world emergencies. While it may offer hypothetical incremental dose reduction, it would also introduce opportunities for error and misjudgment, with the opposite outcome.

The tried and true approach to emergency management is to invoke simple, conservative and manageable measures – measures that can be tested and practiced, and relied upon even during unanticipated and potentially chaotic conditions in a real emergency. The approach recommended by the draft Witt report is counter to this established practice and there is no evidence that such a change is needed to achieve public protection objectives.

This is not to say that we disagree with technically sound efforts to better quantify accident consequences and to incorporate these findings into the emergency planning process. But we maintain that the process must be kept simple and conservative, consistent with current practice.

**IETF Conclusion, with respect to draft Witt Report Recommendations:**

A number of the draft Witt Report recommendations merit consideration. Some of the recommended actions were already being taken prior to the JLWA assessment and others are likely to be adopted and implemented as well. However, none of these actions is so significant as to be essential to adequate emergency management.

## **5 IETF Conclusions and Recommendations**

Based on all of the above, our primary conclusions regarding the draft Witt Report are as follows:

1. The fundamental conclusion drawn by Witt et al, to the effect that the “*current radiological response system and capabilities are not adequate to ... protect the people from an unacceptable dose of radiation in the event of a release from Indian Point*” is simply incorrect. It is not supported by the facts. This conclusion ignores the large body of information and experience in real emergencies of all kinds, it contradicts consistent findings of emergency preparedness experts and responsible public officials, and it is not a logical inference from the underlying information in the draft Witt Report itself.

**IETF Recommendation 1:**

Absent major new information and reassessment, that conclusion must be deleted (or restated in a substantive way) prior to issuance of a final report.

2. The recommendations in the draft Witt Report, while including some viable elements, are not central or prerequisite to a satisfactory emergency response process. Many of the recommendations are conjectural and others are conceptually attractive but vague. Some are incompatible with widely accepted practice. In all of these cases, significant further evaluation would be required prior to acceptance. And in no case do we find (nor does the draft Witt Report identify) any specific recommended action which must be taken in order to have a satisfactory emergency response process.

**IETF Recommendation 2:**

The recommendations should be characterized, in composite, as warranting consideration. The report should make it clear that these recommendations are improvements and enhancements, not prerequisites to satisfactory emergency preparedness.

## References

1. Adler, V., J. Sorensen and G. Rogers, "Chemical and Nuclear Emergencies: Interchanging Lessons Learned from Planning and Accident Experiences", presented at the OECD Workshop on Technical Aspects of Emergency Planning, Brussels, Belgium, June 1989.
2. G. Rogers and J. Sorensen, "Adoption of Emergency Planning Practices for Chemical Hazards in the United States", *Journal of Hazardous Materials*, Vol. 27, No 1, pp 3-26
3. "Risk Characterization of the Potential Consequences of an Armed Terrorist Ground Attack on a U.S. Nuclear Power Plant," prepared by the Electric Power Research Institute for the Nuclear Energy Institute, draft report, December, 2002.
4. "Deterring Terrorism: Aircraft Crash Impact Analyses Demonstrate Nuclear Power Plant's Structural Strength," Nuclear Energy Institute, December, 2002.
5. "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants," NUREG-1150, Volume 1, Section 7, December, 1990.
6. "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Reactor Nuclear Power Plants," NUREG-0396, December, 1978.
7. "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654, November, 1980.
8. J. Sorensen, "Assessment of the Need for Dual Indoor / Outdoor Warning Systems and Enhanced Tone Alert Technologies in the Chemical Stockpile Emergency Preparedness Program", Oak Ridge National Laboratory, ORNL/TM-12095, 1992.
9. Umatilla County Emergency Management. "School preparedness emphasized in October CSEPP advertising campaign," Press Release, 10/17/2002.
10. Quarantelli, E. "Problematical Aspects of the Information/Communication Revolution for Disaster Planning and Research: Ten Non-Technical Issues and Questions," *Disaster Prevention and Management* 6 (1997): pp. 94-106.
11. Sorensen, J. and D. Miletic. "Decision Making Uncertainties in Emergency Warning System Organizations," *International Journal of Mass Emergencies and Disasters*, Vol. 5, No. 1, 1987, pp 33-61.
12. Jackson, D. et al. "Protecting Emergency Responders: Lessons Learned From Terrorist Attacks." Santa Monica, CA: RAND, 2002.
13. Lindell, M. and R. Perry. *Behavioral Foundations of Community Emergency Planning*. Washington, DC: Hemisphere Publishing, 1992.
14. Perkins, Judy, Ibibia K. Dabipi, and Lee D. Han. "Modeling Transit Issues Unique to Hurricane Evacuations: North Carolina's Small Urban and Rural Areas." North Carolina A&T State University Transportation Institute, December 31, 2001
15. Sorensen, J. and D. Miletic. "An Assessment of Pre-emergency Information Programs For Nuclear Power Plant Accidents," pp. 311- 336 in *Preparing for*

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

- Nuclear Power Plant Accidents.* D. Golding, J. Kasperson, and R. Kasperson (eds.). Boulder, CO: Westview Press, 1995
16. Urbanik, T. "Evacuation Time Estimates for Nuclear Power Plants," *J. of Hazardous Materials* 75:165-180, 2000.
  17. Mitchell, K. (ed) *Crucibles of Hazard: Mega-Cities and Disaster in Transition.* Tokyo: United Nations University Press, 1999.
  18. State Capability Assessment for Readiness: A Report to the United States Senate Committee on Appropriations." December 10, 1997.Washington DC: FEMA
  19. FEMA-REP-14, "Radiological Emergency Preparedness Manual" September 1991; FEMA-REP-15, Radiological Emergency Preparedness Exercise Evaluation Methodology", and "Draft Interim Use REP Exercise Preparation Guide".
  20. Quarantelli, E. L., B. Phillips, and D. Hutchinson. (1983), *Evacuation Behavior: Case Study of the Taft, Louisiana Chemical Tank Explosion Incident.* Columbus, Ohio: Disaster Research Center, Ohio State University.
  21. P. Duclos, S. Binder, and R. Riester (1989) "Community evacuation following the Spencer metal processing plant fire, Nanticoke, Pennsylvania," *Journal of Hazardous Materials* 22: 1-11.

## **Appendices**

### **Appendix A: IETF Curricula Vitae**

**Robert T. Bradshaw** is a senior consultant with over 20 years experience in government and private sector crisis management response, planning, training, drills and exercises. His management experience including service as senior vice president and a member of the board of directors of a worldwide crisis management consulting firm and operating his own consulting firm, Bradshaw Emergency Management, Inc.

Mr. Bradshaw has responded to a number of crises on the national and international levels. In particular, Bradshaw established and operated an emergency center for an U.S. airline to respond to the Pentagon disaster in response to the events of September 11, 2001. He has directed a major project for the U.S. Department of Transportation (DOT), Office of Pipeline Safety to support facility oil spill response plan review process. Bradshaw responded as a DOT representative to the San Jacinto River Pipeline incident in and was a principle author of the San Jacinto Post-Incident Assessment. For FEMA and the U.S. Department of Justice, Bradshaw also developed and presented programs on weapons of mass destruction and terrorism designed for local responders.

As an independent consultant, Bradshaw served as offsite emergency planning coordinator for Boston Edison's Pilgrim Nuclear Power Station, where he supervised development of offsite plans and procedures for seven communities and the State of Massachusetts. Other projects included review and comment on the City of Chester, Pennsylvania Disaster Operations Plan and data support to the TMI Evacuation Time Estimate Study.

As a project manager for a major engineering firm, Bradshaw coordinated emergency management planning and training, exercising and drill support for clients such as the offsite radiological emergency preparedness program for Philadelphia Electric's Limerick Generating Station, where he developed county and municipal plans and several school and health-care facility plans. He also prepared and conducted two full-scale exercises for Limerick. He is a former emergency planner for the Pennsylvania Emergency Management Agency, where he developed and reviewed state and municipal emergency plans, revised the state's vulnerability analysis and served as controller/evaluator for six full-scale federally evaluated exercises.

Mr. Bradshaw has a B.S. in Environmental Science from Wilkes College, Wilkes-Barre, Pa., and did graduate work in Urban and Regional Planning at Pennsylvania State University.

**John C. DeVine, Jr.** is co-founder and principal of Polestar Applied Technology, Inc., a company that provides management and engineering services to U.S. and international electric utilities, the U.S. Department of Energy (DOE), and others. His activities at Polestar have included ongoing engineering and management support of commercial U.S.

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

nuclear stations and leadership of numerous technical assessments on various issues related to nuclear safety, spent fuel management, nuclear facility deactivation, and the like, in the public and private sectors.

Prior to forming Polestar in 1992, Mr. DeVine was with the General Public Utilities (GPU) system for 23 years. From 1970 through 1979, he held engineering and management positions involving design and construction of new nuclear plants and major plant modifications. Mr. DeVine had a major role in the response and recovery from the March 1979 nuclear accident at the GPU Three Mile Island Unit 2, serving as part of the Emergency Response Team immediately following the accident, and in the following years as Recovery Engineering Manager and Technical Planning Director. Subsequently, on special assignment to the Electric Power Research Institute (EPRI) in Palo Alto, California (1986 - 1989), Mr. DeVine had responsibility for overall direction of the U.S. Advanced Light Water Reactor (ALWR) Program, coordinating U.S. and international utility industry efforts in developing advanced reactor design concepts for the next generation.

From 1989 through 1992, he served as the GPU Nuclear Corporation Vice President & Director - Technical Functions, with overall responsibility for all engineering work in support of the company's operating nuclear plants, and as a member of the GPU Nuclear Board of Directors. His work at GPU also included executive-level participation in utility industry activities, including the Project Management Board of the Advanced Reactor Corporation, the EPRI Nuclear Power Division Advisory Committee, the Executive Board of the Edison Electric Institute (EEI) Utility Waste Management Group, and others.

Mr. DeVine is a graduate of the U.S. Naval Academy with a B.S. in Engineering and Mathematics. He served as a commissioned officer aboard the fast attack nuclear submarine USS Sunfish (SSN 649).

Mr. DeVine is the principal author of the Indian Point Emergency Preparedness IETF report.

**Mario H. Fontana, Ph.D., P.E.**, has over 40 years of experience in the areas of nuclear reactor safety research and technology at the Oak Ridge National Laboratory (ORNL) and in industry. After retiring from ORNL, he became a member of the U. S. Nuclear Regulatory Commission Advisory Committee on Reactor Safety where he chaired the Severe Accident Subcommittee and the License Renewal Subcommittee and was a member of the Probabilistic Risk Assessment Subcommittee and the Thermal Hydraulic Subcommittee.

At ORNL, Dr. Fontana was assistant director of Nuclear Safety Research Programs, manager of Liquid Metal Breeder Reactor Safety and Core Systems Programs, head of the Advanced Concepts Development Section of the Engineering Technology Division, and assistant director of the Engineering Technology Division. He initiated and conducted research on fission product release and transfer in reactor accidents, reactor heat transfer and fluid flow, severe accident behavior, and accelerator transmutation of

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

waste. He started the DOE research on LMFBR sodium heat transfer in fuel assemblies; the NRC Severe Accident Sequence Assessment Program; and the NRC LMFBR Aerosol Release and Transport Program.

In addition, Dr. Fontana was the Technical Director of the Industry Degraded Core (IDCOR) program to assess in depth the initiation and progression of potential severe accidents in commercial light water reactors. IDCOR was sponsored by 54 organizations in the U. S. and international nuclear industry and directed over 20 subcontractors, including the Electric Power Research Institute, major architect-engineer firms, and major nuclear system manufacturers. Subsequently he was the technical director of the DOE Severe Accident Assessment Program to address severe accident issues for advanced light water reactors under development at the time. He participated in the development of WASH 1400 - The Reactor Safety Study (known as the Rasmussen Report), which was the first extensive probabilistic risk assessment of commercial nuclear reactors. He is a research professor at the University of Tennessee. He has authored over 120 reports and publications, including a chapter on fission product release and transport for Atomic Energy Commission "Handbook of U.S. Containment Technology." He is a registered professional engineer (retired), fellow of the American Nuclear Society, a member of the American Society of Mechanical Engineers and of the engineering honor society Tau Beta Pi.

He received a B.S. from the University of Massachusetts, an M.S., from the Massachusetts Institute of Technology and a Ph.D. from Purdue University, all in Mechanical Engineering.

**David E. W. Leaver, Ph.D.**, is co-founder and principal of Polestar Applied Technology, Inc. He has been involved in safety analysis and engineering support to the nuclear industry for more than 25 years. At Polestar, Dr. Leaver has been engaged in a variety of source term-related work, developing new methods for evaluating fission product aerosol transport in containment, which were successfully applied to the Westinghouse AP600 design basis source term. He developed improved methods for predicting aerosol retention in steam generator tube rupture and interfacing loss of coolant accidents, and applied these methods to develop a technical basis for reduced emergency planning zones in Advanced Light Water Reactors (ALWRs). Dr. Leaver was the lead technical support for NEI efforts to develop a framework for applying AST to operating plants, and has performed safety-related calculations for over a dozen AST licensing applications.

As a co-founder of Delian Corp., Dr. Leaver conducted PRA studies, participated in several independent assessments of nuclear plant operational and engineering readiness, and worked on fossil plant reliability and heat rate improvement. He was involved in development of safety, source term, and severe accident design requirements for the ALWR. Under DOE sponsorship, Dr. Leaver established and led a team in developing a more realistic design basis fission product source term to support ALWR plant design certification. This work directly led to a major NRC effort to update the source term regulations for advanced plants, and later for operating plants, resulting in the alternate source term (AST). Leaver performed some of the earliest probabilistic risk assessment

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

(PRA) studies of nuclear plants including the Clinch River Breeder Reactor Plant and the Big Rock Point.

Dr. Leaver received a B.S. in Electrical Engineering from the University of Washington and an M.S. in Engineering Economic Systems and a Ph.D. in Mechanical Engineering from Stanford University. He served as an officer in the U.S. Navy, stationed at the Division of Naval Reactors.

**Roger P. Shaw, B.Sc., CHP** is the principal of RP Shaw Consulting, providing senior level management and technical support on the national and international level. He is an experienced senior level manager, health physicist and radiological engineer with over 25 years of management experience with nuclear issues, radiation protection and emergency preparedness in the commercial, nuclear power and government sectors. He has performed work in the legal arena with respect to radiation science and radiation health effects. Shaw has provided technical support on decommissioning of nuclear facilities for the National Academy of Sciences. He served as the project manager for the first independent epidemiological study of U.S. nuclear facility workers in collaboration with the International Agency for Research on Cancer, an agency of the World Health Organization.

Mr. Shaw was formerly research scientist with Pacific Northwest National Laboratory. He was the radiological controls/occupational safety director at TMI and Oyster Creek. He was the director at TMI during final de-fueling of the TMI-2 reactor. He has served as a senior member on nuclear emergency response teams for 20 years. He has been an invited lecturer at universities, and national and international seminars.

Mr. Shaw holds a B.S. in nuclear engineering technology from Oregon State University, and has performed graduate studies in health physics and radiobiology at Oregon State and Penn State University and is a graduate of the Penn State Executive Institute. He holds a comprehensive certification with the American Board of Health Physics and is qualified as a technical manager per ANSI 18.1, as a radiation protection manager per ANSI 3.1 and USNRC Regulatory Guide 1.8, and as a radiation safety officer per 10 CFR 33. Shaw is a member of the Health Physics Society, American Academy of Health Physics, American Nuclear Society, American Association of Physicists in Medicine, and Society of Nuclear Medicine.

Mr. Shaw is the Indian Point Emergency Preparedness IETF Project Manager.

**John H. Sorensen, Ph.D.**, has been involved with research on emergency planning and disaster response for over 25 years. He has been the principal investigator on over 40 major projects for federal agencies including FEMA, DOE, EPA, NRC, DOD and CSHIB. Dr. Sorensen has participated in research including the Three Mile Island Public Health Fund Emergency Planning Project on Three Mile Island and the Second Assessment of Research on Natural Hazards where he served as the subgroup leader for Prediction, Forecast Warning and Emergency Planning. He is a distinguished research staff member at Oak Ridge National Laboratory (ORNL).

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

Dr. Sorensen authored over 140 professional publications including *Impacts of Hazardous Technology: The Psycho-Social Effects of Restarting TMI-1*. He has published extensively on response to emergency warnings, risk communications, organizational effectiveness in disasters, emergency evacuation, and protective actions for chemical emergencies. Sorensen has led the development of emergency management information systems, simulation models, conventional and interactive training courses, and educational videos. He has served on advisory committees including the Natural Hazard Research and Applications Center at the University of Colorado, the Atomic Industrial Forum's National Environmental Studies Task Force on Emergency Evacuation, the International City Management Association's Emergency Management "Emergency Planning Greenbook" Project and FEMA's Emergency Management Technology Steering Group. He was a member of the National Research Council, Commission on Physical Sciences, Mathematics, and Resources, Earth Sciences Board, Subcommittee on Earthquake Research.

He has a Ph.D. in Geography from the University of Colorado at Boulder and was an assistant professor at the University of Hawaii.

**Keith Woodard, M.S.**, is the director and senior engineer for ABS Consulting's Washington, D.C. office. With 40 years of experience in atmospheric dispersion modeling and analysis, radionuclide and chemical dose assessment/reconstruction, and probabilistic risk assessment, Mr. Woodard has been directly involved in meteorological data collection and analysis, dispersion assessments, dose calculations, and emergency planning at more than half of the U.S. commercial nuclear power plant sites, at U.S. National Laboratories, and for DOD.

Mr. Woodard is responsible for development and continuous support of the computerized Meteorological Information and Dose Assessment System (MIDAS) used in support of emergency planning, training, and response at more than 30 U.S. nuclear plants. He directed design and development of the anti-terrorism version of the MIDAS system (MIDAS-AT) delivered to the U.S. Marine Corps, U.S. Navy, U.S. Department of State (Diplomatic Security), and state and local governments for impact assessment of potential terrorist threats involving chemical, biological, and radiological agents. Mr. Woodard was responsible for developing the first site-specific model (CRACIT program) to assess reactor accident consequences, which was used in probabilistic risk assessments for more than 12 plants. He directed development of the CRACEZ consequence model, incorporating three-dimensional wind fields, a complex evacuation dose model, and time-dependent releases.

Mr. Woodard participated in the assessment of the radiation exposure immediately after the accident at TMI, and developed computer models to reconstruct the fission product release source term using environmental measurements and site meteorological data. He was extensively involved in the development of radiological accident consequence codes, working with nuclear utilities and the U.S. National Laboratories. He was project manager for installation of computerized on-line emergency dose assessment models at

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

Los Alamos National Laboratory including both radiological and chemical versions of MIDAS. He was co-chairman of the DOE committee to review chemical dispersion computer models and made recommendations regarding best practices. He participated in the International Comparison Study of Reactor Accident Consequence Models (benchmark study) conducted by the Organization for Economic Cooperation and Development and recently chaired an IAEA workshop on accident consequences.

Mr. Woodard has a M.S. in Nuclear Engineering from the University of California at Los Angeles and a B.A. in Physics from Occidental College. He completed graduate courses in Reactor Design and Safety Analysis at the Catholic University in Washington, D.C. and has a certificate from the International Institute of Nuclear Science and Engineering at Argonne National Laboratories. He has authored or co-authored 29 journal articles and presentations on topics including dose assessment, atmospheric dispersion and probabilistic risk assessment.

**Dennis Mileti, Ph.D.**, is professor and chair of the Department of the Sociology and director of the Natural Hazards Research Applications and Information Center at the University of Colorado at Boulder. He has served on numerous advisory boards, including chair of the Board of Visitors to the Federal Emergency Management Agency's Emergency Management Institute, chair of the Committee on Natural Disasters of the National Research Council, and member of the Advisory Board on Research to the U.S. Geological Society. Mileti is a member of the Advisory Board to the Southern California Earthquake Center, the Mid-America Earthquake Engineering Center, and the Multi-Disciplinary Center for Earthquake Engineering Research, the Earthquake Engineering Research Institute, and member of the Multi-Hazard Mitigation Council.

Dr. Mileti is the co-founder and co-editor-in-chief of the journal *Natural Hazards Review*, an interdisciplinary all-hazards journal devoted to bringing together the natural and social sciences, engineering, and the policy communities. He is the author of over 100 publications, with focus on the societal aspects of mitigation and preparedness for natural hazards and disasters. He received a Ph.D. in sociology from the University of Colorado, an M.A. in sociology from California State University at Los Angeles; and a B.A. in sociology from the University of California at Los Angeles.

Dr. Mileti reviewed and provided technical comments on the IETF Report; he did not otherwise participate in its preparation.

**Appendix B: EM Treatment of Public Protection Challenges**

Challenge	Examples of EM Actions
Parental behavior that would compromise school evacuation	Umatilla, Oregon has dramatically increased parent's awareness of the need to stay away from the school in the event of a chemical accident [9].
Difficulties in communications systems	Communication is both a hardware and a human problem [10]. Research has extensively documented communication problems in disasters and ways to overcome such problems [11].
Lack of first responder confidence in the plan(s)	The events of 9/11 shook first responder confidence nationwide, but programs are emerging to restore shaken confidence [12].
Problems caused by spontaneous evacuation	Spontaneous evacuation varies by event. The longer officials delay a decision, the larger the portion of the population will leave prior to an official order. This is accounted for in quantitative studies for hurricane evacuations [13].
Problems caused by shadow evacuation	Shadow evacuation occurs in most events. Hurricane planning assumes that it will occur [13].
Road system inadequacies	Evacuation planners use traffic control strategies, such as lane reversal, to increase road capacity [14].
Public education	Although the adequacy of public information with respect to amount, content and channel of delivery has evoked both academic and practitioner debate, compendia of good educational practices have been compiled [15].
Large day-time transient populations (commuters)	All highly urban areas face daily fluctuations of commuters that need to be taken into account in evacuation planning [16].
Non-English speaking populations	Some mega-cities must deal with over 100 different spoken languages in educating and communicating with the public [17].

**Appendix C: Release Threats due to Terrorism**

This appendix is an expansion of Section 3.4 in the main report, regarding the draft Witt Report treatment of terrorist-related events. Although not mentioned in the stated purpose of the draft Witt Report, it is clear that the underlying context of the JLWA assessment is the implicit threat of terrorism, post September 11. It is also clear that its assumptions regarding the potential consequences of a terrorist-induced radiological release at Indian Point had strong bearing on the report's conclusions.

The report's conclusions in this area are rooted in two premises: (1) the consequences of a terrorist-induced accident at a nuclear plant are unique, and (2) existing Indian Point emergency planning does not accommodate the ramifications of a terrorist-caused release. Neither is correct, as explained in the following sections.

Consequences of Terrorist-induced Event:

The assumption that the consequences of a radionuclide release caused by terrorist action are unique [*pages vii and 240*] is not correct. From a technical standpoint, there is no difference in the magnitude and timing of radionuclide releases from accidental core damage events (i.e., core damage events caused by accidental equipment failure and/or human error) which are the basis for existing emergency planning, and the magnitude and timing of radionuclide releases from terrorist-induced core damage events. Since existing emergency planning considers very severe accidents, including large-break loss of coolant accidents and impaired containment, this is the case even for extreme terrorist-induced events.

Further, there has been a great deal of evaluation of the post 9/11 terrorist threat and its implications on nuclear safety. The IETF reviewed two recent studies on the consequences of terrorist attacks on nuclear plants [3, 4]. These studies conclude that:

- The risk to the public resulting from a core damage event caused by an armed terrorist ground attack on a U.S. commercial nuclear power plant is small, and less than the risk from accidental core damage events postulated for U.S. commercial nuclear plants.
- Given an armed terrorist ground attack, core damage is unlikely because of nuclear plant owner capabilities to detect insider activities, to physically deter the attackers, and to mitigate accident propagation with operator actions and safety systems. The likelihood of severe release is further reduced by the inherent strength of containment and radioactivity removal capabilities of containment and systems.
- A direct hit on a nuclear plant containment by a large, fully loaded commercial aircraft (Boeing 767-400) would not breach the containment structure, and thus the reactor fuel would be protected. Similarly, a direct aircraft hit on spent fuel storage structures would not cause breech.

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

- Because of their very strong and effective security systems, safety systems, and containment structures, and the attendant likelihood that the health consequences of a terrorist-induced event would be relatively minor, commercial nuclear plants are considered unattractive targets for terrorist groups intent on causing loss of life.

While the study details are safeguards information and thus cannot be released to the public, the study clearly shows that the probabilities and consequences (i.e., the likelihood of core damage, and the resulting fission product release magnitude and release timing) of terrorist-induced core damage events are no greater than consequences from accidental core damage events (i.e., core damage events caused by accidental equipment failure and/or human error) based on a comparison of the reference [3] results with results from probabilistic risk assessments (PRAs) performed for U.S. operating nuclear plants over the last 15 years.

Table C-1 illustrates these results, comparing the calculated core damage frequency and the large, early release frequency (a measure of the likelihood of a large, fast radioactive release) for an armed terrorist ground attack event with those calculated for previously evaluated accidents. The results for accidental events are taken from an NRC study that set the standard for U.S. operating plant PRAs in the late 1980s [5]. The Indian Point plant PRAs give similar results to the NRC study. As is evident from Table C-1, the probabilities and consequences of the terrorist-induced event are a small fraction of that from accidental events.

**Table C-1: Comparison of Core Damage and Release Frequencies for Armed Terrorist Ground Attack vs. Accidental Event**

	Core Damage Frequency ( $\text{yr}^{-1}$ )	Large, Early Release Frequency ( $\text{yr}^{-1}$ )
Armed terrorist ground attack [1]	$\sim 2\text{E}-5$	$\sim 1.4\text{E}-6$
Accidental Events PRA (taken from NUREG-1150, large, dry containment [3])	$\sim 2\text{E}-4$	$\sim 7\text{E}-6$

The results of the study on aircraft impact [4] indicate that a direct hit on a nuclear plant containment by a large, fully loaded commercial aircraft (Boeing 767-400) would not breach the containment structure, and thus the reactor fuel would be protected. The study reached the same conclusion for spent fuel storage structures.

Emergency Plan Treatment of Terrorist-Caused Events

The IETF evaluation of terrorist-caused release indicates that existing emergency plans do in fact address potential impacts of a terrorist event, and that annexes or other separate consideration of terrorist-caused releases are unnecessary in emergency plans. Thus

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

---

terrorist-caused release is not expected to have significant ramifications on emergency plans. This is based on the following:

- The fact that the radiological consequences of terrorist-induced accidents, both armed ground attack and commercial aircraft impact, are not unique as discussed above.
- The fact that existing emergency planning guidance is based on a spectrum of accident types. NRC/EPA report NUREG-0396 [6], which is the technical basis for the 10 mile plume exposure pathway emergency planning zone (EPZ), is in turn based on work which includes accidents with large, rapid release as well as slower accidents. NRC/FEMA report NUREG-0654 [7], which provides criteria to licensees and offsite agencies on emergency plan preparation and implementation, specifies that the time at which the major portion of the release can occur is from 1 hour to 24 hours after the initiating event (see Table 2 of reference [7]). Reference [3] indicates that this time for terrorist-induced core damage accidents is approximately 2 hours to 24 hours.
- The fact that existing emergency plans, at the county level, have a process in place to address Impediments to Evacuation. Such impediments can result from a variety of non-terrorist causes including overturned tractor-trailers, downed trees or high voltage wires, and stalled vehicles. Other than extreme, act of war events, the process to address such impediments would also be expected to be applicable in addressing potential terrorist-caused impediments.
- The draft Witt report contained a statement that the Indian Point emergency plan exercise program has not addressed a “fast-evolving accident” (potential to cause radiological consequences to the population in less than 6 hours) in the last seven years (1996 to 2002). To evaluate this assertion, the IETF assessed the accident scenarios used in exercises and drills over a several year period. The results indicate that most Indian Point exercises used scenarios with radiological consequences to the public starting sooner than six hours. It should be noted that the need to address fast-evolving accidents in exercises exists independent of terrorist-induced events.

Table C-2 lists each of the statements in the draft Witt Report regarding the terrorist threat, along with the Independent Expert Task Force (IETF) response to the statements.

**Table C-2: Summary of Witt Report Terrorist-Related Statements and IETF Responses**

	Draft Witt Report Statement and Source	IETF Response
Executive Summary (Major Findings)	"Plans do not consider possible additional ramifications of terrorist caused release."	Existing emergency plans are based on a broad spectrum of radiological accident scenarios which include a range of consequences (fission product release magnitudes and release timing), including rapid releases; these consequences encompass those from potential terrorist-induced accidents (see text of IETF main report for more details on terrorist accident consequences).
Executive Summary (Major Findings)	"We are concerned that when plans and exercises, which omit such things as ... the unique consequences of a terrorist attack, still meet NRC and FEMA regulations, then those regulations need to be revised and updated on a national basis."	As noted above, the radiological consequences of a terrorist attack are not unique; any decision on revising regulations on a national basis is the responsibility of NRC.
Executive Summary (Major Recommendations)	"Territorial annexes or components should be added to the plans, along with consideration of the unique implications of a terrorist event."	The consequences of a terrorist event are not unique, as noted above; separate plan annexes or components for terrorist accident consequences are not necessary.
Executive Summary (Major Recommendations)	"The exercise system should include a number of scenarios, including fast-breaking events that occur with little or no warning. Large shadow evacuation, especially for a terrorist event, should be included."	The exercise process already includes a number of scenarios with a range of timing; shadow evacuation is not unique to terrorist events.
Section 3.1	"Plans that are developed and exercised to protect the population against an accidental release can be effective in preparing for an intentional, (i.e., terrorist-initiated) release as well."	We agree.
Section 3.1	"There may be significant differences in the release characteristics that will drive the type of response required. The most obvious difference is the amount of time available for response. Many accidental release	As noted above, the release characteristics associated with a terrorist attack are not unique; existing emergency plans are based on spectrum of accidents including those with very rapid release (see text of IETF main report for more details

**Indian Point Emergency Preparedness  
Independent Expert Task Force**

Draft WIT Report Statement and Source	IETF Response
<p><i>scenarios acknowledge that some amount of warning would be given to the licensee and therefore the surrounding public before any radiation escaped the containment area. Accidental events would tend to progress more slowly due to numerous redundant safety systems that fail one after another (sequentially). Radiological emergency preparedness exercise scenarios at Indian Point have traditionally used a scenario that progresses in this fashion. Various stakeholders have postulated accident scenarios (for example terrorist- or sabotage-initiated events) that would progress more rapidly. In such cases, the length of forewarning would be reduced considerably with potential impact on the success of protective action measures. The point here is not to debate the credibility of such rapid escalation scenarios. Rather it is to highlight the protection impact if one occurred and ask the question, "Has such an impact even been considered in planning?"</i></p>	<p>on terrorist accident consequences).</p>
<p><b>Section 4.5.2.5</b></p> <p><i>"We discussed the County's plans with the Rockland Police Chiefs Association... There was agreement that without public cooperation, the County's plan will not work, and that recent drills do not give a good idea of the level of preparedness of those tested. As one would expect, this group also was concerned about the unique aspects of a terrorist attack, such as the probability that other related targets, like bridges, would be attacked at the same time, complicating response and effective evacuation."</i></p>	<p>We agree that public cooperation is necessary and that the licensee should facilitate such cooperation through public outreach and education; county plans must deal with Impediments to Evacuation such as could arise from overturned tractor trailers, downed trees or power lines, stalled vehicles, etc., and this capability is also applicable to evacuation routes that may be blocked due to terrorist acts.</p>
<p><b>Section 5.4.1.3</b></p> <p><i>"Communications security involves the steps taken to</i></p>	<p>This should be evaluated further.</p>

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

Draft WIT Report Statement and Source	IETF Response
<p><i>preserve the confidentiality and integrity of radio transmissions. Security of broadcast signals is an issue of increasing importance to public safety communicators, especially in light of escalating concerns of terrorist surveillance. Radio receivers that allow monitoring of public safety and emergency response communications are available to the general public.”</i></p> <p>Section 5.4.3.</p> <p><i>"IPCO recommends that a communications plan for responding to terrorist events, which would also apply to radiological emergency situations, should include:</i></p> <ul style="list-style-type: none"> <li><i>■ Interoperability requirements</i></li> <li><i>■ Capability of the communications system</i></li> <li><i>■ Future system upgrades and expansions</i></li> <li><i>■ Incident command escalation/procedures</i></li> <li><i>■ Logistics and coordination with critical infrastructure</i></li> <li><i>■ Funding sources"</i></li> </ul>	<p>Those aspects of a communications plan which are effective and practical for radiological emergency situations resulting from an accidental release would not be expected to be any different for a terrorist-induced accident release.</p>
<p>Section 8.1.4.1</p> <p><i>"The 2002 Indian Point exercise scenario had a slower rate of progression than previous exercises. There has been considerable concern about terrorist incidents at Indian Point since the events of September 11, 2001. Terrorist incidents have the potential to cause immediate escalation to a Site Area Emergency or General Emergency. Despite these concerns, the 2002 Indian Point exercise featured a slower accident progression."</i></p> <p>Section 8.1.4.2</p> <p><i>"Exercises should cover a variety of conditions...The International Atomic Energy Agency...acknowledged in a meeting held after September 11, 2001, that nuclear</i></p>	<p>As explained in this report, terrorist-caused events do not involve faster-acting releases than other accidents. Indian Point exercises nearly always involve scenarios with fast accident progressions.</p> <p>While a terrorist attack on a nuclear plant may gather much attention from the public with attendant media coverage, the very strong nature of their security systems and safety</p>

*Indian Point Emergency Preparedness  
Independent Expert Task Force*

Draft Witt Report Statement and Source	IETF Response
<p><i>power plants pose attractive targets to terrorists because of the potential to create a "spectacular attack."</i></p>	<p>systems, and the low risks of health consequences, make nuclear plants an unattractive target for terrorist groups intent on causing loss of life (see text of Independent Review Group main report for more details on terrorist accident consequences)</p>
<p><i>"These attacks may be airplanes striking the reactor to trucks using conventional explosives against nuclear reactors....Each of these potential terrorist acts carries the implications of a change in the nature of the scenario under which emergency organization must respond. An immediate crisis and release from a nuclear reactor would require quick action on the part of the facility and offsite emergency response organization to adequately protect vulnerable populations."</i></p>	<p>Large, commercial aircraft impact on a nuclear plant has been shown to not penetrate the containment structure or spent fuel facilities; the consequences from accident scenarios resulting from armed terrorist ground attack on a nuclear plant are encompassed by accident scenarios which form the basis for existing emergency plans; thus these terrorist acts do not change the nature of the scenario under which an emergency organization must respond (see text of Independent Review Group main report for more details on terrorist accident consequences)</p>
<p><i>"The James Lee Witt Associates/IEM team was not tasked to study the physical security of the Indian Point ... plant, or the credibility of terrorist attacks or other potential initiators of a radiological event."</i></p>	<p>We note this statement. This suggests that the authors are not in a position to offer credible assessments of the likelihood or consequences of terrorist-induced radiological accidents.</p>

#### **Appendix D: Behavioral Issues Evaluation**

The following is a summary of behavioral issues addressed in the draft Witt Report, and associated IETF comments:

Draft Witt Report Section and Statement	IETF Response
Executive Summary (Major Findings)  <i>The plans appear based on the premise that people will comply with official government directions rather than acting in accordance with what they perceive to be their best interests.</i>	If government directions provided to the public in the warning message are clear, concise, and stated with certainty, are specific in the recommended action to take, and if they are perceived by individuals to be protective then people will likely follow those directions.
Executive Summary (Major Findings)  <i>The plans do not consider the reality and impacts of spontaneous evacuation.</i>	Spontaneous evacuation is defined as evacuation departures that occur prior to official recommendations. It occurs in most all evacuation situations where an official recommendation or order is made. It occurs for several reasons. First, some people hear a warning of the emergency prior to the evacuation notice and decide to leave before an order is made. Second, people often perceive a warning is an order to evacuate. Third, planned travel behavior that occurs before an official order becomes de-facto spontaneous evacuation. Spontaneous evacuation typically facilitates an official evacuation because a portion of the population has loaded on the evacuation network before the peak loading.
Executive Summary (Major Conclusions)  <i>Expected parental behavior that would compromise school evacuation.</i>	People do try to evacuate as family units, particularly when the time to reunify exists before the predicted onset of a threat. One situation that has been discussed repeatedly is parents picking children up at school.

**Indian Point Emergency Preparedness  
Independent Expert Task Force**

Draft Wit Report Section and Statement	IETF Response
	When time allows and it is facilitated by official encouragement in the warning, it is likely to occur, although not all parents will engage in this process.
Executive Summary (Major Conclusions)	<p><i>These planning problems are more serious ...when the effectiveness of the plan requires a degree of public and responder confidence that is largely absent.</i></p> <p>This is an interesting hypothesis, but has not been examined in the empirical literature on individual behavior in disasters and the literature concerning organizational effectiveness of disaster response organizations.</p>
Executive Summary (Major Recommendations)	<p><i>The likelihood of significant spontaneous evacuation within and beyond the ten-mile zone is indisputable, and has serious public safety implications.</i></p> <p>See comment above on spontaneous evacuation.</p>
Executive Summary (Major Recommendations)	<p><i>Effective public education must be designed and initiated if aspects of the plan that are sensitive to public response are to be effective.</i></p> <p>It is prudent that public education programs support emergency preparedness efforts. Public education, however, is not an absolute pre-condition for effective response. There are many examples of effective public response to emergencies in locations which have had no or weak public education. Despite the lack of a direct causal relationship, most emergency planning experts concur that it helps prepare people for effective response.</p>
Executive Summary (Major Recommendations)	<p><i>Because many essential personnel indicate they will take care of their families, instead of focusing on their response activities, training on emergency family protection should be a component of this public education.</i></p> <p>The concern is that other roles in society that emergency workers have would interfere with their emergency roles. For example, a bus driver could experience strain over one role as an evacuator of</p>

**Inletan Point Emergency Preparedness**  
**Independent Expert Task Force**

---

Draft Witt Report Section and Statement	IETF Response
	<p>school children versus that of a parent. Hypothetically, he or she could drive the bus home and evacuate the family instead of school children. Additionally, a teacher assigned to monitor a group of children and escort them to a shelter may also have other roles and strain could ensue. Ultimately that worker could leave his or her emergency position. Research demonstrates, however, that these scenarios, while feasible, are unlikely.</p>
Section 4.5.2.3  <i>They were troubled that while the County's plan looks good, the public will not cooperate and their expected behavior will frustrate the best of planning. 9/11 demonstrated that the assumptions made in the plan about public behavior are erroneous.</i>	<p>Research conducted to date on public response to the events of 9/11, particularly in New York City, indicate that the public exhibited behavior consistent with current knowledge about human behavior in emergencies. (Tierny, 2002; Sorensen, 2002).</p>
Section 4.5.2.3  <i>For example, parents will go to the schools and thereby prevent orderly evacuation. A public information campaign will not solve this problem, and they do not intend to try to block this expected behavior.</i>	<p>Although there is no direct empirical evidence about the relationship between education and parental behavior in evacuations, evidence does exist that a public education programs can have significant impact on parent's knowledge of school plans for evacuation of children, including the fact that they should not pick children up at the school.</p>
Section 4.5.2.5  <i>...expectation of widespread counterproductive behavior due to fear.</i>	<p>Fear arousal and the impact on behavior has been the topic of considerable psychological research. The results of this research indicate a curvilinear relationship between fear and vigilant behavior. A moderate level of fear arousal increases human performance, whereas extremely high levels of fear can have negative effects on vigilant behavior.</p>
Ch 9  <i>Current emergency planning, training, exercises, and public</i>	<p>We find no concrete evidence presented that this is the</p>

Draft Witt Report Section and Statement	IETF Response
<p><i>People make their own calculations and decisions of what they will do when warned by emergency officials. This decision making and subsequent mobilization to take action is influenced by what they hear from emergency officials, who they hear it from, how often, and how it is interpreted by them. However, emergency officials cannot control this social process. With each successive alert and notification and the diffusion of the warning, more and more people continue to mobilize to take some action.</i></p>	<p>case at Indian Point. The emergency preparedness at Indian Point, like almost every location in the country, can be improved by the incorporation of our present understanding of human behavior in emergencies. The draft Witt report fails to offer many specifics of how this should be done at Indian Point. Moreover, the report fails to demonstrate the nature of that scientific understanding.</p> <p>Not all people make their own decision about what to do when warned. Other factors may preclude such decisions such as people who evacuate by default (already out of evacuation area) or people who are told what to do by family or influential "others". When a decision process occurs there are many factors that influence the decision outcome. A few are itemized in the draft Witt Report.</p> <p>While officials cannot control the social process of response, they can have a major influence over the process. This is well documented in the research record.</p>
<p><i>Case studies of previous emergencies show that spontaneous evacuation from the area at risk may be as little as 10-15%. We believe this estimate to be very low in the case of Indian Point because of factors described elsewhere in this report.</i></p>	<p>The case studies from which this figure is derived are not referenced in the report. It is not clear which factors that are described elsewhere in the report lead to the conclusion that this estimate is low.</p>
<p><i>Post-disaster research indicates that a majority of the people (approximately 60-70% in addition to the 10-15% above) will leave after officials indicate that they should evacuate.</i></p>	<p>Research indicates that the number of people who evacuate from an area advised to evacuate is highly variable ranging from less than 50% to nearly 100%.</p>

Draft Witt Report Section and Statement	IETF Response
<i>There is a lag between the time that alert and notification systems provide their warnings, and when these people actually start to show up on the roads in the area. This lag, of course, is the time for the warning to diffuse and the mobilization to occur. Slowly, people receive the warning and are convinced to take action. This results in a "loading curve," where first a trickle, then an increasing flood of vehicles start to travel along the area roads.</i>	This supports our comments above on public education
Section 11.1 <i>At one site, in Oregon-Washington, the number of parents declaring such intentions is only 34%. Most of the credit for this could be ascribed to the very aggressive public outreach campaign at this location to convince parents to allow children to be protected expeditiously by the schools.</i>	This supports our comments above on public education
Section 11.1 <i>All of these studies catalog stated intentions. All intentions do not translate into actual behavior.</i>	Behavioral intent surveys are not a good basis for predicting behavior in future emergencies.
Section 11.1.1.3 <i>A key question that the counties and state are currently dealing with is whether or not the evacuation time can be reduced by directing traffic on major roads to flow in an outbound direction only. Such a strategy allows, for example, all lanes (normally both directions) of an interstate to be used "one way" to evacuate people out of the hazardous zones to safe areas. The issue thus far is debated in terms of the resources required to control traffic, and the likelihood of traffic accidents and/or citizen non-compliance with directions. This issue needs to be considered in the wider</i>	Traffic accident rates decline in emergency evacuations, perhaps by an order of magnitude. This is attributed to slower speed, one way movement of vehicles, more vigilant behavior, and altruistic-helping behavior.  Experiences to date with traffic control in emergency situations suggest that people will be in greatest compliance with traffic guides, or physical barriers that are difficult to defeat (such as concrete barriers). Some

	Draft White Paper Section and Statement	IETF Response
Section 11.1.1.4	<i>It is ultimately individual decisions which dictate the public's behavior in an emergency situation. If the public does not trust the information being given to them about what they should do in the event of an emergency, they are more likely to disregard the procedures laid out for them in the emergency response plans and presented to them in the emergency response booklets. They will make their own decisions about when to evacuate and how they should reunite with their family; their actions may not be in line with the prescribed plan and may jeopardize their health and safety and that of others as well.</i>	People are more likely not to respond to a warning if they do not trust the source of the warning. The relative strength of this single factor must be assessed in the overall context of many other factors which influence warning response. People are likely to make their own decisions and not follow "official advice" if that advice is contrary to other information people are receiving and it is evaluated as being non-protective. For example anecdotal evidence exists that people in the North Tower of the World Trade Center ignored public address announcement to stay at their desk when they saw the other tower on fire and people falling out of the building, choosing to evacuate instead.
Section 11.2.1.2	<i>Planning, response, and public education all need to take into account the general findings of disaster researchers on how people behave during emergencies as well as specific findings from the region on the expected actions and intentions of the people living and working around both nuclear facilities, both within and outside of the 10 mile EPZ.</i>	Sound emergency plans should be based on the specific relevant findings from disaster research not from findings from behavioral intent surveys unless those intent surveys are firmly grounded in empirical relationships between intents and actual behavior. While such data does exist for many consumer choices (such as buying Pepsi versus Coke), it exists for only a few emergency settings.
Section 11.2.1.2	<i>The public behavior calculus should also include the special concerns of the people in New York. Having lost many lives in the 9/11 tragedy, they may be especially vulnerable to concerns about terrorism; accordingly, their behavior may</i>	See above comment about behavior in 9/11.

*Indian Point Emergency Preparedness*  
**Independent Expert Task Force**

---

	Draft Witr Report Section and Statement	IETF Response
	<i>be markedly different from what may be expected at other regions and locations.</i>	
Section 11.2.1.2	<i>Therefore we recommend ... A compendium of knowledge on public behavior during emergencies be compiled to inform planning, response, and public education.</i>	Such compendiums have been compiled for a number of specific topics as well as in several general sources.
Section 11.2.1.2	<i>Therefore we recommend .. A baseline public opinion survey on the knowledge, intentions, and expected behavior of people during an incident at the Indian Point and Millstone facilities be conducted. This survey should be repeated at intervals, not longer than two years, to note any changes in the public perceptions or expected behavior, including the effects of public education discussed elsewhere. The survey should not be confined to those within the 10 mile EPZ because there are significant health and safety issues related to public behaviors beyond that</i>	See comments above on behavioral intents.
Section 11.2.1.2	<i>Therefore we recommend ... be developed to include variations in public behavior. A sensitivity analysis should be conducted for each portion of the plan that involves public behavior, and where substantial uncertainties exist on how and when the public may behave.</i>	This recommendation has merit and should be examined in more detail.
Section 11.2.1.2	<i>Therefore we recommend ... Exercises be held that specifically test for the ability to integrate public behavior into response. To be effective, emergency managers must take into account what the public will do, and exercises should emphasize this pragmatic realism.</i>	This recommendation has merit and should be examined in more detail

	Draft White Paper Section and Statement	IETF Response
Section 11.2.1.3	<p><i>Modeling studies be conducted to examine the optimal strategies for protection of public health and safety. These studies should examine many contingencies. The contingencies should vary the type of release, weather conditions, time of day, traffic congestion levels, public behavior, and other factors. These variations are necessary to arrive at robust and comprehensive solutions on how people can best be protected.</i></p>	<p>This recommendation has merit and should be examined in more detail</p>
Section 11.2.2.4	<p><i>Disaster researchers have found that public education can be effective if it is focused toward families building emergency plans for a variety of hazards.</i></p>	<p>The causal implications of this statement are not supported by research. Although it is correct that households with emergency plans are more likely to respond to a warning, a focus towards family planning has not been shown to lead to more effective educational programs.</p>

Mrs. KELLY. Instead of browbeating our local officials into accepting emergency plans that they are clearly uncomfortable with, FEMA needs to be addressing local officials and addressing their concerns and reassessing the impact of terrorism that a dense population may have on an accident at Indian Point, and it may have on the emergency plans that we need to formulate.

FEMA's outdated approach to Indian Point's emergency plans has to change. At that hearing, FEMA was given by the committee, at my request, a 30-day deadline to respond to those matters, and I sincerely hope they are now using that time wisely and will be able to provide answers which indicate that they are now finally taking the concerns of local officials and the Witt report seriously. Any further actions to intimidate the State and localities into rubber-stamping plans that they have already refused to certify is not going to be tolerated.

Again, I want to thank the witnesses for being here today, and I thank you, Mr. Chairman and Mr. Kucinich, for holding the hearing. I look forward to today's testimony, and thank you for allowing me to speak.

Mr. SHAYS. We are delighted to have your participation. Thank you for being here.

Mr. Tierney, I am going to make a motion; then we will allow you a chance to sit down a second.

I would ask unanimous consent that all members of the subcommittee be permitted to place an opening statement in the record, and that the record remain open for 3 days. Without objection, so ordered.

I ask further unanimous consent that all Members be permitted to include their written statement in the record. Without objection, so ordered.

With that in mind, I would point out the following individuals have submitted testimony for the record: Congresswoman Nita Lowey from New York, Congressman Eliot Engel from New York, Dr. Makhljani, Institute for Energy and Environmental Research, Linda M. Lewis, Emergency Management Specialist, Columbia, MD, and also a statement from the Project on Government Oversight, referred to as POGO.

[NOTE.—The Project on Government Oversight report entitled, "Nuclear Power Plant Security, Voices from Inside the Fences," may be found in subcommittee files.]

[The information referred to follows:]

**OPENING STATEMENT  
THE HONORABLE NITA M. LOWEY  
SUBCOMMITTEE ON NATIONAL SECURITY,  
VETERANS AFFAIRS, AND INTERNATIONAL RELATIONS  
MARCH 10, 2003**

Thank you Chairman Shays and Ranking Member Kucinich for holding this hearing and for your continued leadership on nuclear safety and security. I appreciate this opportunity to share my views.

As evidence of terrorist intentions to strike nuclear facilities grows, robust security policies and emergency response plans are imperative. A study conducted by the Project on Government Oversight, along with numerous other reports, confirms that security regulations at nuclear facilities demand serious revision. The Design Basis Threat, an assumption about the size, sophistication, and tactics used by a hostile force, has not changed. The NRC has not required reinforcement of the walls of nuclear reactors and spent fuel pools, which were not designed to withstand the impact of a large civilian aircraft. Force-on-force drills, in which plant personnel respond to a mock terrorist attack, have not been administered at some facilities in over eight years, a condition exacerbated by the chronic turnover afflicting this industry.

Rather than discussing safety and security regulations generally, I will focus on Indian Point, a commercial power plant located 24 miles north of New York City. The facilities' two operational reactors and three spent fuel pools, located on the Eastern Bank of the Hudson River, lay a few miles north of my district. Deficient emergency response plans and major security oversights have elicited a local and national outcry. Last Monday, Representative Engel and I hosted a Congressional forum in my district exploring continued safety and security issues at the plant. Testimony from community leaders, first responders, Indian Point security personnel, and nuclear experts reinforced my conviction that the emergency response plans and current security posture of the facility are wholly inadequate. Although overwhelming evidence – including an independent investigation by former FEMA director James Lee Witt -- suggests that the emergency response plans for Indian Point are unworkable, FEMA appears ready to certify them following correction of a few minor flaws and receipt of some documents.

Certainly, the stakes are high. In 1982, the NRC commissioned a study which found that a meltdown at Indian Point, which lies within fifty miles of 21 million people--could lead to 123,000 short-and long-term deaths, over 300,000 injuries, and property damages conservatively

estimated at over \$1 trillion. Factoring the four-fold increase in property values in the New York metropolitan area since the study, the damages for our region could reach \$2.3 trillion.

Aside from the tremendous catastrophic costs of a successful attack, Indian Point merits the committee's attention for another reason as well. Safety and security flaws at the plant, far from unique, plague facilities across the country. These shortcomings powerfully demonstrate the need for better oversight by NRC and FEMA and a careful reevaluation of safety and security regulations.

I want to focus on just a few key ways I believe Indian Point's emergency response plans and security policies are inadequate:

**1. THE CURRENT EVACUATION PLAN IS TOO LIMITED AND NOT WELL KNOWN**

The current Emergency Planning Zone extends just ten miles from the plant, even though a release could contaminate a 50-mile or even larger swath, exposing people to radiological doses well above the EPA threshold. At a Congressional hearing on emergency planning at Indian Point on February 25, NRC Region I Administrator Hubert Miller defended this policy, asserting that exposure levels outside the ten-mile planning zone would be too small to require evacuation. NRC's policy, which contradicts EPA and FDA recommendations, flies in the face of science. Indeed, a 5 year-old child 20 miles downwind from Indian Point could receive a radiological dose 180 times the FDA's threshold for administration of potassium iodide, and, if so, would be 2,000 times more likely to develop thyroid cancer. An adult in a similar location could receive a radiation dose 60 times the EPA evacuation threshold and have a lifetime risk of dying from cancer 30% higher than an adult who had not been exposed.

Further, the emergency plan assumes that people would comply with official government directions rather than acting in their perceived self-interests. I believe that significant self-evacuation within at least a 50-mile radius around the plant is likely, especially given the absence of formal plans to evacuate these people.

After Three Mile Island, 144,000 people fled, even though the official advisory was that pregnant women and pre-school children -- about 3,400 people -- leave. This dramatically conveys the impact of what's called "shadow evacuation" on a community experiencing a nuclear incident. However, FEMA instantly dismissed the possibility of spontaneous evacuation in its

recently released Final Exercise Report, stating, "Most people will comply with official directions, i.e. hurricanes and tornado warnings." No explanation follows.

A local police chief affirmed at my local Congressional forum that he would not dispatch his policemen, who lack the most basic protective gear, to control traffic during a radiological catastrophe. He also noted that his officers were not properly informed about their roles and responsibilities in such an event. Thus, it is unlikely that law enforcement would be able to prevent "shadow evacuation".

The public, which doesn't participate in FEMA's biennial exercises, is even more unfamiliar with evacuation procedures. Only 3% of those living within the Emergency Planning Zone could name a reception center. A poll conducted by Marist, a local college, found that 60% of residents living outside the Emergency Planning Zone but within a 50-mile radius of Indian Point would attempt to evacuate. The spontaneous exodus of some 12 million people would dangerously congest the few evacuation arteries that exist around the plant.

## **2. RESEARCH, COMMUNICATION, AND PLANNING ARE INADEQUATE.**

The Witt report found that the emergency plans do not integrate population density data, "plume speeds" (how fast released nuclear material is moving), and evacuation time estimates. Without this information, it's hard to really be prepared.

Even if we had access to the most complete data, we would have a serious challenge telling local communities about it – a problem also noted in FEMA's Final Report. Local communications systems are old, and would delay an effort to gather, assess, and share critical information quickly. There's no system to automatically transmit information to local communities -- for example, the phones and fax machines used by surrounding communities cannot transmit detail-rich maps.

## **3. THOSE CHARGED WITH EXECUTING THE PLANS ARE SKEPTICAL**

We've seen a profound lack of confidence in the evacuation plan among the very people we'd rely on in an emergency -- from police officers and firefighters, to plant security guards and bus drivers. The police and firefighters who need to move the traffic and keep citizens calm lack the most basic protective gear.

Our hospitals are similarly ill-equipped to treat radiation victims. During a radiological catastrophe, hospitals would have to assess and decontaminate patients outdoors to prevent radioactive material from entering facilities. The Director of Emergency Services at a major hospital near Indian Point stated: "In the event of a radiological event, the hospital would be quickly overwhelmed. We lack adequate manpower to assure safety/security...A couple of hundred [patients] would be overwhelming, thousands would be impossible to handle...There is no assurance that the required human resources would be available or willing." Off-site decontamination would be limited, as few mobile decontamination facilities exist. Still worse, state and federal agencies, empirically, do not arrive on the scene for three days, leaving localities to cope alone.

Witt's report also found that, although the best defense is a good offense, strategies for various contingencies -- such as the length of time we'd have to evacuate a particular neighborhood during a release -- are completely absent. Although a terrorist attack could result in a radioactive release in as little as thirty minutes, the evacuation time estimates for just the ten-mile Emergency Planning Zone are between 8-10 hours. Obviously, lost minutes could translate into loss of life during a fast-release incident.

#### **4. THE EMERGENCY EXERCISES DON'T TEST THE PLANS' EFFECTIVENESS.**

The most damning part of the Witt report dealt with FEMA's biennial emergency exercises, which Witt called "of limited use." FEMA talks a lot about these drills, but they only happen once every 2 years. Witt concluded that this exercise process is seriously flawed, and I agree. Until FEMA puts in place strong performance measures, its exercises will prove little and bring even less comfort to my constituents.

#### **5. THE PLANS IGNORE TERRORIST THREATS.**

In December, 2002, NRC stated, "the possibility of a terrorist attack...is speculative and simply too far removed from the natural or expected consequences for agency action." 4 or out 5 people living in the areas surrounding Indian Point disagreed in a poll conducted by Marist College. Local, state, and federal governments are spending billions of dollars on Homeland Security precisely because terrorism remains a real possibility, and I fear the NRC's casual

dismissal of this possibility is the surest way to a repeat episode. The NRC's steadfast insistence that terrorist threats are too implausible to merit the Commission's attention is bewildering.

Nuclear accidents tend to progress slowly: serial failure of numerous systems, such as back-up pumps and the outer containment dome, precede release of radioactive material. However, a terrorist attack could puncture the containment dome, disable back-up systems, or incapacitate plant operators, resulting in a much faster release. Sophisticated terrorists, such as those that toppled the World Trade Center, could not only attack the reactor but also destroy plume-tracking equipment, communications systems, or roads used in an evacuation. It is high time FEMA revise standards for evaluating emergency response plans to ensure they would work in the event of hostile strike.

#### **6. SECURITY DEFICIENCIES PERSIST AT INDIAN POINT AND OTHER NUCLEAR REACTORS.**

An internal report completed by Entergy in December, 2001, and leaked in 2002, provides a telling picture of security operations at the plant. Four out of 5 guards interviewed by Entergy lacked confidence in their ability to thwart a terrorist attack. The majority of guards also stated they feared retribution if they spoke up about security concerns and sub-standard hiring and training procedures. Guards were given multiple opportunities to pass requalification exams, and security drills were rigged to ensure success. Nevertheless, in an August security drill at the plant, mock attackers were able to place simulated explosives at the spent fuel twice in 60 seconds or less. The NRC ultimately passed Indian Point with high marks.

The NRC's policy of benign neglect should no longer stand. Training and qualification standards for guards must be strengthened. A comprehensive evaluation of present terrorist threats - and of the new security policies needed to address them -- is long overdue. As terrorist threats increase across the globe, we delay at our own peril.

Thank you.

Testimony of Eliot L. Engel  
Government Reform Committee  
Subcommittee on National Security, Emerging Threats and International Relations  
Hearing on Emerging Threats: Assessing Public Safety and Security Measures  
at Nuclear Power Facilities  
March 10, 2003

Thank you, Mr. Chairman, for holding this hearing on security at nuclear power plants and the efficacy of emergency evacuation plans.

Mr. Chairman, as you know, we have a unique situation just north of both of our districts. Indian Point nuclear power plant is located 35 miles north of Times Square and nearly 20 million people live within the 50 mile radius of the plant.

The problems with Indian Point are not new. Over the past twenty years, people in the area have been concerned with safety at the plant due to several leaks that have occurred and the difficulties associated with evacuating the area in case of a catastrophic accident. The events of September 11<sup>th</sup> have only heightened concerns over Indian Point, particularly since one of the planes that flew into the World Trade Center passed directly over the plant. In addition, blueprints for American nuclear power plants were found in Al-Qaeda caves in Afghanistan. A study conducted by the Marist Institute found that 82% of people living within a 50 mile radius of the plant are concerned about a terrorist attack on the facility. A majority of the residents within the 50 mile radius think the plant should be closed and are "undeterred by the possibility of the increased cost of energy, the loss of a portion of the jobs at the plant, or the loss of local revenue." Moreover, a majority of residents in the 50 mile radius do not feel that the plant is secure and protected against a terrorist attack.

People have a reason to be concerned. Not only has the New York City area been under a heightened alert since September 11<sup>th</sup>, but the effects of an attack would be devastating: NRC-commissioned studies by Sandia Labs and Brookhaven National Lab estimate that a successful terrorist attack on the plant could cost over \$500 billion and result in over a quarter million cancer-related fatalities.

The basic problem we are all facing is not one of whether we are pro-nuclear or anti-nuclear. It is whether our constituents can be assured that there are sufficient plans to keep them safe and out of harms way.

Mr. Chairman, 9/11 changed the equation. We cannot assume that our pre-9/11 security precautions are adequate in the post-9/11 world. As a result, I have sent a letter to Homeland Security Secretary Tom Ridge requesting that the Department work to enhance security at Indian Point and nuclear power plants across the country. As part of my testimony, I am including that letter for the record.

I believe that Indian Point's emergency evacuation plan is woefully inadequate. New York State Governor George Pataki commissioned a study of the evacuation plan by former

FEMA Director James Lee Witt. The final study was released on March 7, 2003 and found that the plant's evacuation plan is fatally flawed. The report determined that "the current radiological response system and capabilities were not adequate to overcome their combined weight and protect the people from an unacceptable dose of radiation in the event of a release from Indian Point..." Finally, the report concluded that there is no way to improve the existing emergency plan to sufficiently meet the current security threat.

The four counties surrounding Indian Point and New York State refuse to certify the emergency evacuation plan. In response, FEMA preliminarily refused to certify the emergency evacuation plans on February 21<sup>st</sup>, saying it could not provide "reasonable assurance" that the public would be protected in the event of a radioactive release from the plant. Unfortunately, though, FEMA has given itself until May 2<sup>nd</sup> to issue a final determination about the emergency evacuation plan. FEMA's responsibility is to provide adequate assurance that the evacuation plan works. Without that assurance, the plant needs to be shut down immediately. It is reprehensible that FEMA would wait until May 2 to forward its concerns to the NRC. If the plan does not adequately protect the 20 million people living within 50 miles of the plant, the plant needs to be closed.

Mr. Chairman, I would like to thank you for holding this important hearing about the lack of oversight exercised by FEMA and the NRC over Indian Point and other nuclear power plants.

**Testimony of Arjun Makhijani on Secure Storage of Nuclear Spent Fuel before the  
House Subcommittee on National Security, Emerging Threat and International  
Relations**

(written testimony submitted for the record)  
March 10, 2003

Mr. Chairman and members of the Subcommittee, thank you for including my testimony in the record of today's hearing. Let me mention my background briefly. I am president of the Institute for Energy and Environmental Research<sup>1</sup> and have authored or co-authored many studies on nuclear waste management and related topics for more than two decades. In 1972, I received a Ph.D. in Engineering from the Electrical Engineering department of the University of California at Berkeley, where I specialized in nuclear fusion. I am the principal author of the first technical assessment of the energy efficiency potential of the U.S. economy, which was completed in 1971.

Nuclear power reactor spent fuel should be stored in a manner that would not result in catastrophic damage even if the storage sites are subjected to a terrorist attack of the magnitude that occurred in New York City on September 11, 2001. This would require hardening of spent fuel storage. Were that done, spent fuel storage sites would become unattractive as terrorist targets. That is because it is very unlikely that a terrorist group would go to the trouble of planning and implementing a complex and dangerous attack on a spent fuel storage facility if there were essentially no prospect of producing dramatic, catastrophic damage. Hence security would be achieved not only by drastically reducing the damage should an attack occur, but also by making the storage sites unattractive targets. In other words, hardening of spent fuel storage should be seen as a measure that could help prevent a terrorist attack.

Spent fuel storage in pools outside of reactor secondary containment does not provide the requisite level of protection to achieve the goal stated above.<sup>2</sup> A range of terrible outcomes are possible from serious attacks. This is clearly indicated by government studies. For instance, storage of spent fuel at Indian Point is currently unacceptably vulnerable and steps should be taken to harden storage. Further, dry cask storage of spent fuel in present day systems licensed by the Nuclear Regulatory Commission also does not meet the criteria of secure, hardened storage, in my opinion.

Storage of spent fuel must be explicitly hardened against terrorist attack in order to minimize the risk of attack and the consequences in case it does take place. The criteria for Hardened On-Site Storage (HOSS) are:

---

<sup>1</sup> The website of the Institute for Energy and Environmental Research is [www.ieer.org](http://www.ieer.org). The address is 6935 Laurel Avenue, Takoma Park, Maryland 20912.

<sup>2</sup> This not mean that storage inside secondary containment does not need to be further hardened. A different evaluation is needed of the consequences of attack in such cases. I am not addressing this issue here.

1. It should not result in catastrophic releases and should be able to resist almost all types of attacks. The estimated amount of radioactivity that would be released in even severe attacks should be small enough that the storage system would be unattractive as a terrorist target.
2. It should be able to withstand a direct hit by a large commercial airliner full of fuel or anti-tank weapons without catastrophic offsite releases.
3. The individual canister locations should not be easily detectable from offsite. This means that it must not be visible from offsite and the infrared signature should be obscured enough to prevent a direct hit in case of attack with infrared guided munitions.

One approach to HOSS would be to construct silos resembling small hardened missile silos. Spent fuel could be put in large casks that are then emplaced in these silos. A building would cover the entire set of silos. Silos of modest depth, possibly twenty or thirty feet located in this way could be designed to meet all the criteria I have set forth above. I have not costed such a system, but would venture to suggest that it would increase the cost of power by less than ten percent.

All the spent fuel that can be removed from the spent fuel pool should be mandated to be put into HOSS. This means that all spent fuel that is cool enough should be removed from the pools and put into hardened on site storage. However, some of the spent fuel at the plant cannot really be made very secure so long as the plant is operating. This is because fresh spent fuel must be stored underwater in a spent fuel for several years to prevent a meltdown. It is possible to increase the robustness of spent fuel pools to attack and this should be considered.

The surest approach is, of course, to close nuclear power plants and eliminate spent fuel pools. It is possible to design a different type of power plant that would not require spent fuel pools. Whether such plants may have other vulnerabilities and whether they should be designed and licensed should be put in the context of the overall debate on nuclear power and energy policy. But the possibility of other types of plants does not and should not affect the security debate on the current design of nuclear power plants, which all require spent fuel pools.

It is clear that a plan for the shut down of spent fuel pools, and hence of the current type of nuclear power plant (light water reactors), is desirable from the point of view of security. I recognize that nuclear power plays too large a role in the US electricity system for all nuclear plants to be closed in the near-term. But some plants can be shut quickly. Every effort should be made to prioritize the shut down of plants so as to minimize the risk in places that appear to be more vulnerable than others. For instance, I believe that an urgent effort should be made to line up a reliable source of replacement power for the nuclear power reactors at Indian Point and to implement a conservation and efficiency plan so that these reactors can be closed as soon as possible with grid reliability being maintained. This is because Indian Point is in a densely populated urban

region that terrorists have attacked, where there is no reasonable evacuation plan, and where spent fuel is stored in vulnerable pools.

While it is not possible to shut down all nuclear power plants in the near-term, it is certainly possible to phase out nuclear power plants. A nuclear power phase-out can and should be made compatible with significant reductions of emissions of greenhouse gases. A technical assessment I did in the immediate aftermath of the September 11, 2001 tragedy to assess this issue concluded that it was feasible to close all nuclear power plants and to reduce carbon dioxide emissions by 40 percent or more in three to four decades. With very vigorous government policies it may be possible achieve these goals faster. My study is entitled *Securing the Energy Future of the United States*. It can be downloaded from the website of the Institute for Energy and Environmental Research at <http://www.ieer.org/reports/energy/bushtoc.html>

MAR-10-2003 MON 10:13 AM FROM:LEWIS

FAX:3013070191

PAGE 2

**Comments on the Witt Associates Review of  
Emergency Preparedness at Indian Point and Millstone**

Submitted by  
Linda M. Lewis, 8710 Hayshed Lane, #302, Columbia, Maryland 21045

***Introduction***

I am a professional emergency management specialist with a B.S. degree in Emergency Administration and Planning and ten years experience in radiological emergency planning. I have reviewed dozens of state and local radiological emergency plans and was an evaluator at the 1998 Indian Point radiological exercise. The following comments are my own and do not represent the opinions of any employer.

***Comments***

Witt and Associates, and its subcontractor, Innovative Emergency Management, deserve praise for their report, revealing serious problems in state and local preparedness for an emergency at Indian Point nuclear power plant. However, many additional issues of great importance to those who live or work within 50 miles of the Indian Point plant were not addressed in the Witt report. The limit of 5 pages makes it impossible to address any issue in depth appropriate to the subject matter.

**Recovery Planning** (not addressed in report)

The most glaring deficiency in the report is the lack of discussion of recovery phase issues, which the contract inexplicably excluded from consideration (p. 244). "Recovery" is a term used to describe the post-disaster period that follows conclusion of emergency rescue activities. The recovery phase, which can take years to complete, includes such activities as decontamination of roads, structures and the environment; relocation of residents and businesses from contaminated areas; reentry into areas deemed safe for human activity; long-term monitoring and health care; and preventing contaminated agricultural products from being consumed or marketed to an unsuspecting public. The recovery phase is the most costly phase of a disaster, but government agencies rarely develop adequate recovery plans, despite a potential 50 % cost savings.

Recovery activities are typically coordinated by state authorities and are described in greatest detail in state plans. However, the details of New York's recovery plans are unknown to the many residents and businesses that would rely on them. Moreover, several findings in the Witt report, such as lack of state provisions for monitoring contamination of water supplies, suggest that recovery planning is seriously inadequate. Inadequate recovery planning exposes individuals and businesses to potentially catastrophic financial impacts, in addition to health impacts.

Recovery planning, including reentry and ingestion pathway protection, is required of state and local governments by federal regulation NUREG-0654. In a major radiological release, long-term health threats, such as increased cancer risk, and major financial impacts can be expected, and the cumulative impacts increase with geographic distribution, population density and property values. NRC and FEMA require plans for dealing with long-term contamination within 50-miles radius of a nuclear plant, and New York City is just 30-35 miles away. Its skyscrapers present a logistical challenge for decontamination and relocation, and many businesses

MAR-10-2003 MON 10:14 AM FROM:LEWIS

FAX:3013070191

PAGE 3

potentially would suffer long-term disruptions that result in major economic loss or failed businesses. The fact that priority in planning is given to life and health issues does not make economic issues irrelevant.

One of the most important recommendations offered in the Witt report was the recommendation for greater outreach by government and the utility to local citizens and businesses in emergency planning activities, and development of personal and business preparedness. Such cooperation is critical to the success of any plan, whether for nuclear power plant disasters or terrorist attack.

Exercise Evaluation Procedure and Policy (p. 221)

However, another critical element of successful preparedness is missing from the report's recommendations: a set of procedures to insulate planners and exercise evaluators from retaliation for reporting problems. As an exercise evaluator, I was subjected to reprisal for reporting problems at a nuclear power plant emergency exercise, in Delaware, in 1996. Other evaluators have repeatedly indicated that fear of reprisal for fully reporting safety problems is widespread. Therefore, it must be assumed that many more problems exist than the Witt report uncovered, because many problems never make it into official exercise reports.

Safety problems often fall through cracks in federal policies. For example, federal planning requirements consider children only when they are on school property, and federal exercise policy scores agencies on adherence to their plans—even if they are inadequate. There once was a procedure to address plan inadequacies, but that disappeared in the late 1990's. Current exercise and planning policies supposedly were implemented to allow evaluators to focus on results, a strategy the current report recommends. But, lack of specific requirements also makes it easier to hide inadequacies, particularly if an evaluator is not expert in the subject area or if participating officials try to force a favorable report.

The Witt report failed to explain why the Federal Emergency Management Agency (FEMA) withheld its approval of the New York State plan from 1981 until 1996, when FEMA finally granted its approval. It is highly irregular for a nuclear power plant to operate for 15 years without a federally approved emergency plan, and the public deserves an explanation.

Schoolchildren (page 173)

At the 1998 Indian Point exercise, I was the federal evaluator assigned to observe preparedness for school children at Rockland County EOC. County officials made a decision to release children to go home at mid-day, potentially exposing them to a (simulated) radioactive plume on their way home, or at home, if no guardian was present. The exercise director planned to list the issue under the decision making function in the exercise evaluation report, but the Witt report makes no mention of it. State and local officials promised to correct this problem, but current plans are not adequate to prevent a recurrence, perhaps in a real emergency. The use of Potassium Iodide as a protective action is problematic for children who are home alone at the time of an emergency, because adult administration of the drug is advisable. Also, individuals

MAR-10-2003 MON 10:14 AM FROM:LEWIS

FAX:3013070191

PAGE 4

who are visiting or traveling through the area, including youth groups, would not likely have Potassium Iodine available.

Putnam County Evacuation Issue (page 204)

The Witt report failed to point out that delay in issuing an evacuation order to Putnam County residents in the recent exercise meant that people would have been moving about outside, or traveling in cars, as the plume was passing overhead. Thus, they would have been worse off, in many cases, than if they had remained in their homes. The goal of planners should not be simply to avoid life-threatening exposures, but to avoid any exposure where possible.

General Comments

Emergency preparedness deserves greater recognition of its importance to determining whether a nuclear power plant should be licensed to operate. Nuclear power plants are a relatively new, highly complex technology that is aging in ways we may not suspect - a problem brought to light at the Davis Besse plant. To these risks are added the increased threats of terrorist attack, which no responsible emergency planner would ignore. From the Titanic to the World Trade Center, even highly regarded technologies have failed, and when they did, what mattered most was protecting human life. The ability of state and local agencies and citizens to safely respond to a radiological emergency should therefore be the overriding consideration in licensing and siting nuclear power facilities. I recommend additional investigation into New York state emergency planning and into REP program policies for evaluating plans and exercises. I also recommend that federal officials allow New York citizens to decide whether Indian Point should continue to operate. Surely those who would live with the consequences, not distant federal officials, are most entitled to make that grave decision.

- February 7, 2003

Mr. SHAYS. At this time, I will call the witnesses' names, I will swear them in, and then, Mr. Tierney, if you would like to make a statement, we will welcome that.

We have Mr. W. Craig Conklin, Director, Technological Services Division, Office of National Preparedness, Emergency Preparedness and Response Directorate, Department of Homeland Security. We have Mr. Hubert Miller, Region 1 Administrator, Nuclear Regulatory Commission [NRC].

Gentlemen, I will swear you in, and then we will hear from Mr. Tierney, and then we will go to you all. If you would please stand.

[Witnesses sworn.]

Mr. SHAYS. Note for the record our witnesses have responded in the affirmative.

As you know, gentlemen, we swear in all of our witnesses before this committee.

Mr. Tierney, welcome. If you have any comments, love to hear them.

Mr. TIERNEY. Thank you, Mr. Chairman. Thank you for having this important hearing. Thanks to our witnesses that will be testifying soon.

I think we all are aware of the pending hostilities that potentially may erupt at any time. As a consequence, we have to be prepared for anything that might happen in this country, not the least of which is preparedness with regard to safeguarding our nuclear facilities and the materials at those power plants.

There are six communities in my district that fall within 10 miles of a nuclear power plant at Seabrook, NH, and even though we are across the border of a State, we are not that far away from any reaction that might occur. People in these communities are concerned and fearful that we are not prepared.

I visited the Seabrook site and have gone through their processes for testing and preparedness and was not all that impressed. I think there is plenty of room for improvement there.

I think this administration needs to really focus its attention on a myriad of issues, not the least of which is the security of these facilities. I note that last March Secretary Abraham asked for a substantially larger amount of money than the administration allocated toward these needs for protecting nuclear facilities.

I also note there was some discussion, Mr. Chairman, in some of the hearings last year about increasing the radius through which KI would be distributed, the potassium iodide would be distributed, and I, amongst others, had recommended up to 50 miles. We eventually saw that the administration proposal for 20 miles carried the day, but know that even at this point in time, we don't have the report that was supposed to be out in December for assuring us of how that was to take place. I guess we can feel less than secure that it is going to be done by the due date in June, that there is going to be a plan in place for that.

So I think we have a lot of work to do. This is a well-timed hearing. I look forward to the testimony and hope that we can get the answers and find out that we are embarking on some more secure operations.

Mr. SHAYS. I thank the gentleman.

I just would tell our witnesses that we ask you to limit your statement to 5 minutes, but we will allow you to go up to 10. Our preference is that you finish closer to the 5, but what you have to put in the record is more important than just 5 minutes.

So, we do the clock this way. It is a 5-minute clock, and then we turn it on for another 5 minutes, and you never want to get up to 10, though. OK.

Mr. Conklin.

**STATEMENTS OF W. CRAIG CONKLIN, TECHNOLOGICAL SERVICES DIVISION, OFFICE OF NATIONAL PREPAREDNESS, EMERGENCY PREPAREDNESS AND RESPONSE DIRECTORATE, DEPARTMENT OF HOMELAND SECURITY; AND HUBERT MILLER, NRC REGION 1 ADMINISTRATOR, NUCLEAR REGULATORY COMMISSION, ACCCOMPANIED BY LAWRENCE CHANDLER, ASSOCIATE GENERAL COUNSEL FOR HEARINGS, ENFORCEMENT AND ADMINISTRATION, NUCLEAR REGULATORY COMMISSION**

Mr. CONKLIN. Thank you. Good afternoon, Mr. Chairman and members of the committee. I am Craig Conklin, Director of the Technological Services Division of the Emergency Preparedness and Response Directorate of the Department of Homeland Security. My division administers FEMA's Radiological Emergency Program [REP]. I am pleased to be with you today to talk about the REP program and the issues relating to offsite emergency preparedness for nuclear power facilities.

I will discuss the establishment of the program, Federal, State and local program responsibilities, program guidance and regulations, FEMA's revised exercise evaluation methodology, the results of the September 24 exercise, the status of the offsite plans around Indian Point; and then I will talk about the two reports concerning Indian Point and Millstone that were prepared by the New York State contractor, and the July 2001 GAO report on Indian Point.

FEMA recognizes and respects the concerns of the people of New York regarding the health and safety of those living and working in the vicinity of the Indian Point Energy Center. The health and safety of the public is our primary concern.

It is FEMA's responsibility to assure that the emergency plans in place provide a reasonable assurance that the health and safety of the people around the plants can be protected. Exercises of the plants are an important component of that process, as they allow participants to identify strengths and weaknesses in the plans so that corrective actions can be taken.

FEMA believes that the emergency response plans must be flexible and dynamic. We expect them to be continually updated based on changing circumstances or improved procedures. For example, the plans should be updated based on the 2000 census population figures and the new evacuation time estimates that are currently being developed.

In an Executive order dated December 7, 1979, President Carter transferred the Federal lead role in offsite radiological emergency planning and preparedness from the U.S. Nuclear Regulatory Commission to the Federal Emergency Management Agency, now the Emergency Response and Preparedness Directorate of the Depart-

ment of Homeland Security. In response to this new role, FEMA established the REP program. It is important to note that the REP program responsibilities encompass only offsite activities; that is, State, tribal and local government emergency planning preparedness activities that take place beyond the physical boundaries of the power plants. On-site activities continue to be the responsibility of the NRC.

The REP program works closely with 450 State, tribal and local governments to ensure that there is reasonable assurance that offsite response officials can protect their citizens in the event of a nuclear power plant accident.

FEMA's responsibilities are to review and evaluate offsite response plans, evaluate the exercises conducted to determine whether such plans can be implemented, make findings on the adequacy of those plans and exercises, and submit those to the NRC.

We also provide radiological emergency response training to first responders and other officials, and at the national level we chair the Federal Radiological Preparedness Coordinating Committee. At the regional level, we chair the Regional Assistance Committee, which has Federal agency membership in the nine FEMA regions with power plants; respond to requests to the NRC; and of course we provide regulatory oversight, rulemaking, and guidance as necessary for effective program implementation.

State, tribal and county responsibilities are to prepare plans and procedures for responding to an accident at a nuclear power plant and review and update them annually as necessary; conduct biennial exercises; ensure that first responders and State, local and tribal officials are trained properly; and finally, to ensure that a response organization's facilities, equipment and supplies are adequate for response to a radiological incident.

In 1980, we issued joint guidance between FEMA and NRC, which establishes the basis for the REP program in a document called Criteria for Preparation and Evaluation of Radiological Emergency Plans and Preparedness in Support of Nuclear Power Plants. This document contains the planning standards and related criteria that we use in evaluating and reviewing offsite response organizations' plans, as well as guidance for onsite aspects addressed by the NRC.

In 1996, we published a Federal Register notice addressing a strategic review of the REP program and requested comments on the REP program. Based on comments received, one of the major recommendations made to FEMA—made by FEMA was to streamline the program and eliminate the exercise checklist and inconsistencies among regions. As a result, a new exercise evaluation methodology was developed that is more results-oriented and does not depend on a checklist.

The September 24, 2002, exercise conducted at Indian Point was done to evaluate the offsite emergency response, and NRC evaluated the onsite emergency response. The purpose of the exercise was to determine whether the offsite plans and procedures for responding to an emergency at Indian Point could be implemented to protect the general public. Exercise participants included responders and emergency managers from Westchester, Rockland, Orange

and Putnam Counties in New York; Bergen County, NJ; and the State of New York.

The exercise scenario that was used to drive the players' actions involved a series of mechanical malfunctions that hypothetically resulted in the degradation of plant operating systems and within 4 hours a release of radioactive material from the plant that forced the offsite response organizations to take actions to protect the public.

The specifics of the scenario and the offsite extent of play were developed and agreed upon by a scenario development team. This team consisted of representatives from the licensee, State and local governments, the NRC and FEMA. Although we recommended several times that the exercise contain a terrorism component, the other members of the team decided that such a component should not be incorporated into an exercise at this time, but should be considered for future exercises.

The State and local organizations participating in that exercise demonstrated the satisfactory knowledge of the emergency response plans and procedures, their actions were implemented adequately, and there were no issues that arose to the level of a deficiency. However, evaluators did identify 13 areas requiring corrective action during this evaluation. None of these, though, were raised to an issue that would have endangered the general public.

Historically we work closely with our State and tribal partners to ensure the public health and safety remains the focal point of the program. We will continue to do so for the future.

Specific to Indian Point, we have worked closely with them to prepare for the exercise, as well as upgrade local plans and procedures. We have participated in or supported over 50 other activities, including meetings of out-of-sequence exercises, training opportunities, planning sessions, and other independent communications between the FEMA regional office and the State and counties.

In January 2002, we provided the State and counties an extensive matrix identifying plant information that we need in order to conduct our review. However, we did not receive that information until a few weeks before the September exercise, thus limiting our ability to thoroughly evaluate these plans for consistency with our regulations. In recognition of the constraints and limitations on the State and local governments, we proceeded with the exercise with the understanding that we would complete this review after the exercise.

In November 2002, we had such a meeting with the States and established a May 2003 timeframe for completion of State and county plan updates that would permit inclusion of the critical evacuation time estimates into the process.

In February 2003, we provided the State and counties opportunities to submit the updated plans as previously agreed upon. If the State and county submitted the information before this date, FEMA will evaluate it and then decide if we can make a determination of reasonable assurance. This deadline provides FEMA with an opportunity to review the final State report that is due shortly and the State plans for distribution of KI that was submitted in February 28, 2003.

The most significant remaining issues include the letters of agreement, the updated evacuation time estimate, study of the Joint News Center procedures; school district, preschool, day care center plans for the children.

Two reports on Indian Point, the review of the emergency preparedness on Indian Point and Millstone, issued—that recently finalized, I believe that appendix came out today, validated our findings, especially those specifically identified in January 2002 and December 3, 2002, and February 21 correspondence. Examples of valid information contained in the report include an improved public outreach effort should be used to better educate all sectors of the public on their role. FEMA should develop an outcome-based exercise program for exercise evaluation, and we have developed such an approach, and it was used in the exercise. However, the report may contain information that will help us to better attain this goal, and planning must account for the strong possibility of spontaneous evacuation.

FEMA is committed to continuous improvement of the REP program, and will evaluate each recommendation in the report to determine its validity with regard to the level of emergency preparedness at Indian Point, or to its applicability programwide. FEMA is looking forward to evaluating the final report that came out today.

The GAO report in 2000 was as a result of a steam generator or tube rupture accident at Indian Point. The GAO report included suggestions for improving the program, and concluded that some improvements had been made to the lessons learned since the accident, but further improvement was needed.

The final report was published in 2001. There are several recommendations I would be pleased to discuss with you. The report concluded overall that the Director of FEMA determine the reasons why the four counties responsible for the response at the plant are not knowledgeable about FEMA's initiatives and, if necessary, reassess its current practices of communicating through the State during nonemergency situations. After completion of the report, FEMA responded to the recommendations by communicating with the counties and States simultaneously, and, as detailed in my written testimony, greatly increased communications with the four risk counties.

In conclusion, the REP program is committed to diligent support of the efforts of the State and local governments to improve the REP planning and exercise process.

Again, I would like to thank you, Chairman Shays and Representative Kucinich, for the opportunity to appear before you today. And I will be happy to answer any questions you may have.

Mr. SHAYS. Thank you, Mr. Conklin.

[The prepared statement of Mr. Conklin follows:]

**Written Statement of  
W. Craig Conklin  
Emergency Preparedness and Response Directorate of the  
Department of Homeland Security  
House of Representatives  
Subcommittee on National Security, Emerging Threats, and International Relations**

**March 10, 2003**

Good afternoon Mr. Chairman and Members of the Committee. I am W. Craig Conklin, Director of the Technological Services Division in the Emergency Preparedness and Response (EP&R) Directorate of the Department of Homeland Security. My Division administers the Federal Emergency Management Agency's (FEMA) Radiological Emergency Preparedness (REP) Program. I am pleased to be with you today to talk about the REP Program and the issues relating to offsite emergency preparedness for nuclear power facilities. I will first discuss the (1) establishment of the REP Program, and (2) the program's responsibilities, (3) guidance and regulations; then (4) describe FEMA's revised exercise evaluation methodology, (5) the results of the September 24, 2002 Indian Point exercise, and (6) the status of the Indian Point offsite response plans; and, lastly, address (7) the draft report on Indian Point and Millstone emergency preparedness commissioned by the State of New York and (8) the July 2001 GAO report on Indian Point.

The Federal Emergency Management Agency recognizes and respects the concerns of the people of New York regarding the health and safety of those living and working in the vicinity of the Indian Point Energy Center. The health and safety of the public is our primary concern.

It is FEMA's responsibility to ensure that the emergency plans in place provide reasonable assurance that the health and safety of the people around the plants can be protected. Exercises of the plans are an important component of that process; they allow participants to identify strengths and weaknesses in the plans so that corrective actions can be taken.

FEMA believes that emergency response plans must be flexible and dynamic. We expect them to be continually updated, based on changing circumstances or improved procedures. For example, the plans should be updated based on the 2000 Census population figures and the new Evacuation Time Estimates.<sup>1</sup> Evacuation time estimates for Indian Point are currently being revised to include consideration of shadow evacuations and new population numbers.

Based on the absence of corrected and updated plans from the Indian Point counties and state, at this time, FEMA has not provided a final recommendation of "reasonable assurance" that the county and State officials can take appropriate measures. FEMA will, however, make a final determination based on the information provided by the counties and State.

#### **1. The Radiological Emergency Preparedness Program**

In the Presidential Directive of December 7, 1979, President Carter transferred the federal lead role in offsite radiological emergency planning and preparedness from the U.S. Nuclear Regulatory Agency (NRC) to the Federal Emergency Management Agency, now the Emergency Response and Preparedness Directorate of the Department of Homeland Security. In response to this new role, FEMA established the REP Program to (1) ensure that the health and safety of citizens in the vicinity of commercial nuclear power plants would be adequately protected in the event of a nuclear power plant accident, and (2) inform and educate the public about radiological emergency preparedness. It is important to note that REP Program responsibilities encompass only "offsite" activities – that is, State, Tribal and local government emergency planning and preparedness activities that take place beyond the physical boundaries of the nuclear power plant. Onsite activities as well as the overall determination of whether there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency continue to be the responsibility of the NRC.

---

<sup>1</sup> The radiological emergency community uses the term "evacuation time estimates" to generally refer to effective traffic management matters. These estimates are not relied upon in the actual decision making process for evacuations, but are used in the process to identify potential bottlenecks so that effective traffic control measures can be put in place.

The REP Program works closely with 450 State, Tribal, and local governments to ensure that there is reasonable assurance that offsite response officials can protect their citizens in the event of a nuclear power plant incident.

The offsite emergency planning and preparedness activities conducted by State, Tribal and local governments are fully or partially funded by the licensees. The amount of funds provided by the licensees to these governments can vary considerably, and it is up to each State, Tribal and local government to negotiate with the licensee to obtain this funding.

## 2. REP Program Responsibilities

FEMA's, and now EP&R's, specific responsibilities are to:

- Review and evaluate offsite radiological emergency response plans developed by State, Tribal and local governments;
- Evaluate exercises conducted by State, Tribal and local governments to determine whether such plans can be implemented;
- Make findings and determinations on the adequacy of offsite emergency planning and preparedness and submit them to the NRC in connection with the NRC's licensing and continued oversight of commercial nuclear power plants;
- Respond to requests from the NRC pursuant to the Memorandum of Understanding (MOU) between the NRC and FEMA dated June 17, 1993;
- Provide radiological emergency response training to first responders, State, Tribal and local emergency managers, and federal staff at FEMA's Emergency Management Institute;

- At the national level, chair the Federal Radiological Preparedness Coordinating Committee, whose 17 member agencies implement federal activities in support of State, Tribal and local emergency planning efforts;
- At the regional level, chair the Regional Assistance Committees, with federal agency memberships in the nine FEMA regions with nuclear power plants. The regional committees help State, Tribal and local jurisdictions through the plan review process. Each agency focuses on its particular area of expertise to assess the effectiveness of the emergency plans in place at the county and State levels; and
- Provide regulatory oversight, rulemaking and guidance as necessary for effective program implementation.

If the State and locals participate in the REP Program, their responsibilities are to:

- Prepare plans and procedures for responding to a nuclear power plant incident and annually review and update, if necessary, these plans and procedures.
- Conduct biennial exercises of these plans.
- Ensure that first responders and State, Tribal and local managers are properly trained.
- Ensure that the response organizations' facilities, equipment, and supplies are adequate for a response to a radiological incident.

### 3. REP Program Guidance and Regulations

In October 1980, FEMA and the NRC jointly published the fundamental REP Program Guidance document, NUREG 0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." This document contains the planning standards and

related criteria that FEMA uses in reviewing and evaluating offsite response organizations' radiological emergency plans and preparedness as well as guidance regarding onsite aspects addressed by the NRC.

NUREG-0654 endorses the 10-mile Emergency Planning Zone (EPZ) and the 50-mile Ingestion Pathway Zone (IPZ) as a planning basis for offsite emergency preparedness efforts considered necessary and prudent for large power reactor facilities. The potential consequences, timing, and release characteristics of a spectrum of accidents were considered when establishing this planning basis. NUREG-0654 also contains guidance on the initiation and duration of a release of radioactive material from a site. Table 2 of NUREG-0654 states that the time from the initiating event to the start of an atmospheric release could range from 30 minutes to 24 hours, the release could last from 30 minutes to several days, and a major portion of the release could occur from 30 minutes to 24 hours after the start of the release.

Appendix 1 to NUREG-0654, "Emergency Action Level Guidelines for Nuclear Power Plants," identifies four classes of Emergency Action Levels (EAL). The four EALs, in increasing potential for a release of radioactive material, are Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency. It is important to note that the first three levels contain initiating conditions that relate to the crashing of aircraft onsite or unusual aircraft activity over the facility.

After the publication of NUREG-0654, FEMA published regulations for the REP Program. Plans, exercises and drills are addressed in 44 C.F.R. Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," which includes the NUREG-0654 planning standards. In 44 C.F.R. Part 351, "Radiological Emergency Planning and Preparedness," Federal agency roles in assisting State and local governments are discussed, and the situation where State or local governments decline or fail to prepare offsite plans and/or participate in exercises is addressed in 44 C.F.R. Part 352, "Commercial Nuclear Power Plants: Emergency Preparedness Planning." These documents, the Program Guidance and the regulations establish FEMA's responsibility to review, evaluate, and approve State, Tribal and local radiological emergency plans and preparedness and evaluate exercises of them. Under the NRC regulation, 10 C.F.R. Part 50, "Domestic

Licensing of Production and Utilization Facilities," and the FEMA/NRC MOU, the NRC bases its emergency preparedness decisions on a review of FEMA's findings and determinations as to the adequacy and capability of implementing offsite plans and on the NRC's findings as to the adequacy of onsite plans.

It is important to note that these guidance documents and regulations contain the minimum requirements that must be met. State, Tribal and local governments are encouraged to go beyond the regulatory requirements if they believe more extensive planning is needed--based on the unique geographic, demographic, and other characteristics of their community. Although the REP Program requires planning for the 10-mile EPZ and the 50-mile IPZ, it also recognizes that the plume may not stop because it has reached 10 or 50 miles downwind. Therefore, State, Tribal or local governments may plan beyond these two distances if they believe that such planning is needed in order to protect the general public from the consequences of an incident.

#### **4. Revised Exercise Evaluation Methodology**

In July 1996, FEMA published a Federal Register notice announcing a strategic review of the REP Program and requesting comments on the REP Program. Based on comments received, one of the recommendations made to FEMA was to streamline the program and eliminate the exercise checklist and inconsistencies among regions. As a result, a new exercise evaluation methodology was developed that is more "results oriented" and does not depend on a checklist. In other words, the focus is on accomplishment of the mission rather than the means for doing so. The six evaluation areas listed below reflect current program policy and guidance on what is required for the successful demonstration during an exercise:

- Emergency Operations Management
- Protective Action Decision-Making
- Protective Action Implementation
- Plume Phase Field Measurement and Analyses

- Emergency Notification and Public Information
- Support Operations/Facilities

These six evaluation areas with their sub-criteria are based on the 15 planning standards of 44 C.F.R. Part 350, which are further defined in NUREG-0654 and are listed below:

- Assignment of Responsibility;
- Emergency Response Support and Resources;
- Emergency Classification System;
- Notification Methods and Procedures;
- Emergency Communications;
- Public Education and Information;
- Emergency Facilities and Equipment;
- Accident Assessment;
- Protective Response;
- Radiological Exposure Control;
- Medical and Public Health Support;
- Recovery and Reentry Planning and Post-Accident Operations;
- Exercises and Drills;
- Radiological Emergency Response Training; and
- Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans.

**September 24, 2002, Indian Point Exercise**

On September 24, 2002, an exercise was conducted at the Indian Point Energy Center. FEMA's job was to evaluate the offsite emergency response and the NRC evaluated the onsite emergency response. The purpose of the exercise was to determine whether the offsite plans and procedures for responding to a radiological emergency at Indian Point could be implemented to protect the general public. Exercise participants included responders and

emergency managers for Westchester, Rockland, Orange and Putnam counties in New York; Bergen County, New Jersey; and the State of New York.

The exercise scenario that was used to drive the players' actions involved a series of mechanical malfunctions that hypothetically resulted in a degradation of plant operating systems and, within four hours, a release of radioactive material from the plant that forced the offsite response organizations to take actions to protect the general public. The specifics of the scenario and the offsite extent of play were developed and agreed upon by a Scenario Development Team. This team consisted of representatives from the licensee, State and local government, the NRC, and FEMA. Although FEMA recommended that the September 2002 exercise scenario contain a terrorism component, the other members of the team decided that such a component should not be incorporated into an exercise at this time but should be considered for future exercises. However, one nuclear power plant in California has conducted a full-scale exercise using a terrorism event as a basis. Thus, we are familiar with that type of event as well.

State and local organizations that participated in the exercise demonstrated a satisfactory knowledge of their emergency response plans and procedures. Their actions were implemented adequately and there were no issues that rose to the level of a Deficiency;<sup>2</sup> however, evaluators did identify 13 Areas Requiring Corrective Action (ARCA)<sup>3</sup> during this evaluation. Seven ARCAs involved the Joint News Center and the provision of information to the media and the general public. In addition, five ARCAs identified during the last exercise evaluation have not been corrected and one ARCA from an ingestion pathway exercise conducted in May 1999 remains unresolved. It is important to note that none of the issues raised in these ARCAs would have endangered the public.

---

<sup>2</sup> A Deficiency is defined as "an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide a reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of nuclear power plant." Deficiencies must be corrected within 120 days of being identified.

<sup>3</sup> An ARCA is defined as "an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety." The correction of an ARCA is required before or during the next scheduled biennial exercise. If the ARCA is not corrected by the next exercise, FEMA recommends corrective actions to be demonstrated before or during the following exercise.

#### 6. Status of Radiological Emergency Preparedness Plans for Indian Point

Historically, FEMA has worked closely with our State, Tribal and local partners in the REP Program to ensure that public health and safety remains the focal point of the program. FEMA Region II performs significant work for the nuclear power plants in New York and New Jersey. Specific to Indian Point, FEMA has worked closely with the State of New York and its counties to prepare for the September 24, 2002, exercise, as well as upgrade the local plans and procedures. FEMA has participated in or supported over 50 other activities including meetings, out of sequence exercises, training opportunities, planning sessions and scores of independent communications between FEMA's regional office and the State and counties. Since January of 2002, FEMA has maintained extensive contacts with state and local governments regarding Indian Point:

- We have held eight meetings with the State, four risk counties and the host county to discuss plans, plan reviews and required changes. We use these opportunities to provide guidance and address local and state planning concerns.
- A full week of training on FEMA's new exercise evaluation methodology was provided in Rockland County.
- Five major pre-exercise planning meetings were held to discuss the exercise scenario, the extent-of-play agreement, out-of-sequence demonstration schedules, policy updates, and numerous exercise details. We use these opportunities to work directly with the State and counties to address any planning concerns and to provide assistance when required.
- A meeting prior to the exercise with all evaluators and State, local and utility representatives to review the extent-of-play and other exercise particulars.

- Two meetings were conducted immediately after the September exercise. The first was with State and county officials to describe initial exercise findings and address specific local concerns. The other was the public meeting at which FEMA and NRC described the exercise findings to the public and the media.
- We held 60 exercise and planning events prior to the exercise for all four risk counties and the host county involving county reception centers, congregate care centers, emergency worker decontamination centers, bus companies that would provide evacuation assistance for schoolchildren and special and general populations, and school districts. These activities allow us to evaluate preparedness, as well as to provide immediate technical assistance and feedback on issues.

In January 2002, FEMA provided the State and counties an extensive matrix identifying plan information that FEMA needs in order to conduct its review. However, FEMA did not receive the revised plans addressing our findings until a few weeks before the September 2002 exercise, thus limiting our ability to thoroughly review these plans for consistency with our regulations before the exercise. In recognition of the constraints and limitations the State and local governments were facing, we proceeded with the exercise with the understanding that FEMA would complete its review and provide comments back to the State when we file our final exercise report. The following sequence of events then occurred:

- In November 2002, FEMA and the State had a joint meeting and generally established a May 2003 timeframe for completion of State and county plan updates that would permit inclusion of the critical Evacuation Time Estimate study into the planning process.
- The November 2002 meeting results were summarized in a December 3, 2002 letter from FEMA to the State.
- In a February 21, 2003 letter, FEMA transmitted its report for the September 24, 2002 exercise to the State of New York. Because the State and county did not provide

FEMA with the information necessary to make an informed decision, FEMA could not provide reasonable assurance at that time. FEMA provided the State and counties the opportunity to submit the updated plans by the previously agreed upon deadline of May 2, 2003 and offered to assist the State and counties with the plan update. If the State and counties submit the information before this date, FEMA will evaluate it and then decide if FEMA can make a determination of "reasonable assurance."

- The May 2 deadline also provides FEMA an opportunity to review the final State report that is due shortly and the State plan for distribution of potassium iodide that was submitted to FEMA on February 28, 2003.

As just stated, FEMA has reviewed the radiological emergency plans for the State of New York and Westchester, Rockland, Orange and Putnam counties for the year 2000 and the plan changes submitted in 2002. We note that some significant planning items FEMA has requested from the localities and the State have not yet been addressed or provided to us for our 2002 plan review. The following are the most significant remaining planning issues raised in both the FEMA report and the independent report commissioned by the State of New York.

*Letters of Agreement.* Neither the State nor the counties have submitted their letters of agreement to FEMA for review. Without these documents, FEMA cannot determine whether the necessary resources would be available in the event of an incident at the plant.

*Updated Evacuation Time Estimate Studies.* The plans do not yet incorporate data from the updated evacuation time estimate studies that reflect new demographics as well as shadow evacuation. Without this information, the plans cannot reflect the latest figures regarding the time it would take to evacuate the populations of given Emergency Response Planning Areas under various conditions (i.e., time of day, day of week, time of year, weather conditions, etc.). It is our understanding that the information will be provided to each county and will be used to update plans accordingly.

*Joint News Center Procedures.* The Joint News Center Procedures provide the basic process for informing the public during a Joint News Center response to an emergency at

the plant. These procedures are not as effective as they could be and it is critical that these procedures be corrected. If not, they will continue to interfere with performance, as noted during both the 2000 and 2002 exercises. However, the State and counties have initiated improvements in the Joint News Center procedures. FEMA has, and will continue to, actively support this effort.

*School District, Pre-School, Day Care Center Plans.* The procedures for schools in the county plans are adequate, but the individual school district, pre-school and day care center plans have yet to be submitted to FEMA for review for consistency and completeness.

7. Draft Report "Review of Emergency Preparedness at Indian Point and Millstone"

On August 1, 2002, Governor George Pataki announced a comprehensive and independent review of emergency preparedness for the area around the Indian Point Energy Center and that portion of New York that is located near the Millstone nuclear power plant in Connecticut. The draft report was published on January 10, 2003. A public comment period that ended on February 7<sup>th</sup> was established to provide an opportunity to comment on the conclusions and recommendations contained in the report. As stated in the Executive Summary, the purpose of the independent review was to evaluate related activities that, when taken together, should indicate whether the existing plans and capabilities of the State and local governments are adequate to ensure the safety of the people of New York in the event of an incident at one of these plants. In addition, it examined how those existing plans and capabilities might be improved.

FEMA believes that the draft report contains a number of insightful and valuable recommendations that could lead to improved preparedness around Indian Point and around other nuclear power plants. It is of particular interest that all of the planning issues identified in the draft report had been previously identified by FEMA. Thus the draft report validated FEMA's planning findings, especially those specifically identified in our January 2002, December 3, 2002, and February 21, 2003 correspondence with the State. Examples of valuable report recommendations include:

- An improved public outreach effort should be used to better educate all sectors of the public on their role in emergency response.
- FEMA should develop an outcome-based program for exercise evaluation. FEMA has developed such an approach, and it was used for the September 24, 2002 exercise. However, the report may contain information that will help FEMA to better attain this goal.
- Planning must account for the strong possibility of spontaneous evacuation.

FEMA is committed to continuous improvement of the REP Program and will consider all recommendations. Again, we value many of the findings in the draft report and understand the concerns it has generated among State and local officials surrounding the facility. However, we note that some areas of the draft State report did not appear consistent or did not accurately reflect our understanding of the available research. FEMA is looking forward to evaluating the final report that is due out later this month.

#### **8. Government Accounting Office (GAO) Report on Indian Point**

In February 2000, due to a steam tube rupture at the Indian Point power plant, an Alert level (second in severity of four levels) was declared and the plant was shut down. The total amount of radioactivity released by this accident was about one-thousandth of the dose an individual receives from a chest x-ray and did not pose a threat to the public. However, the utility, which at that time was Consolidated Edison, and State and local officials' response to the accident caused concerns about onsite and offsite communications and preparedness. As a result, Representatives Nita Lowey, Sue Kelly, Benjamin Gillman, and Dan Burton requested a GAO investigation of the response. The GAO met with officials from New York State and the four risk counties to obtain their perspective of the offsite response taken during the emergency and to determine suggestions for improvement. The GAO then included the suggestions in a June 25, 2001 draft report, entitled "Nuclear Regulation: Progress Made in

Emergency Preparedness at Indian Point 2, but Additional Improvements Needed." The GAO concluded that some improvements had been made due to lessons learned since the accident, but that further improvement was needed. The GAO provided the draft to FEMA for comment, considered FEMA's comments, and published the final report in July 2001. This process was also followed, with the addition of the utility and the NRC, for the onsite concerns.

The final report contained the following State and county observations for improvement in FEMA's administration of the REP Program for Indian Point: (1) The counties have the lead in offsite preparedness for Indian Point, and FEMA should communicate directly with the counties--not through the State. (2) The February 2000 emergency ended at the Alert level; however, most REP exercises end at the highest level--the General Emergency. It would be more realistic for exercises to periodically end at the Alert level, since a General Emergency has never occurred in the United States. (3) FEMA should consider using tabletop exercises as alternatives to the biennial exercises. (4) FEMA should make the counties aware of the details of FEMA's strategic review of the REP Program and the opportunities that the review might afford to the offsite response organizations.

The July 2001 GAO report concluded with an overall recommendation that "...the Director of FEMA determine the reasons why the four counties responsible for emergency response at Indian Point 2 are not knowledgeable about FEMA's initiatives and, if necessary, reassess its current practice of communicating through the State during nonemergency situations." Subsequent to completion of the report, FEMA responded to the GAO's recommendation by communicating with the counties and State simultaneously, and, as detailed earlier in this testimony, greatly increasing communications with the four risk counties, with the State's concurrence, through frequent meetings and other forms of communication.

#### **Conclusion**

In closing, the REP Program is committed to diligent support of the efforts of the State and local governments to improve the REP planning and exercise process. Again, I would like to thank you Chairman Shays and Representative Kucinich for the opportunity to appear before you today. I would be happy to answer any questions you may have.

Mr. SHAYS. Mr. Miller. You don't have to read as fast.

Mr. MILLER. Good afternoon, Mr. Chairman and members of the subcommittee. It is a pleasure to appear before you today to discuss NRC actions with respect to security and emergency preparedness at nuclear power facilities.

Security and emergency preparedness are key elements of the defense in depth safety philosophy NRC has long employed in regulating nuclear power plants. This philosophy, which requires redundancy of safety systems to reduce the potential for accidents, imposes high standards of quality on operations and construction of plants, recognizes that accidents can still occur.

For this reason containment structures and other safety features are required to minimize the potential for release of radioactivity from a site. Through emergency planning, additional mechanisms are put in place to protect the public in the unlikely event these barriers fail.

Security of nuclear power plants has been given top priority at NRC since the September 2001 terrorist attack. Within minutes of the attack, NRC directed plants across the country to go to the highest level of security. While for many years all nuclear power plants have been required to have security programs sufficient to defend against violent assaults by well-armed, well-trained attackers, numerous additional steps have been taken since September 2001 to thwart terrorist acts.

Through formal orders NRC has required increased security posts and patrols, substantial additional physical barriers, and greater stand-off distances for vehicle bombs, stricter site access controls, to name only a few of these measures.

Through inspections we have been able to confirm that required security enhancements are being implemented at all plants. We have recently begun enhanced force-on-force exercises; in fact, we expect the Indian Point facility to be among the first involved in this initiative.

Working with the Department of Homeland Security, other Federal agencies and the Intelligence Community, we have continued comprehensive assessment of security programs, among other things evaluating the current threat environment, and addressing issues such as security guard fatigue and training which have emerged since September 11.

For many years, NRC has made legislative proposals addressing a wide spectrum of activities that would further enhance security of NRC-licensed activities. We will continue to work with Congress and look forward to favorable action on these proposals.

Let me now turn to emergency planning. Following the accident at Three Mile Island, the NRC determined that improved emergency planning by Federal, State and local governments was needed. NRC issued planning standards which required, among other things, the establishment of two emergency planning zones around each nuclear plant site. The first is a zone covering an area of about 10 miles in all directions from a plant, where the greatest potential for radiological effects from a release exists. Plans must address protective actions for members of the public in this zone, which could involve evacuation or sheltering. A second extended planning zone of about 50 miles is also established to deal with po-

tential lower-level, long-term risks associated principally with contamination of food and water that might occur.

Emergency planning is a dynamic process. Plans are tested in frequent drills and periodic full-scale exercises that simulate serious reactor accidents. Having lead at the Federal level for reviewing offsite preparedness, FEMA periodically assesses these plans and exercises. If at any time FEMA finds offsite preparedness is not adequate, it will inform the Governor of the State and the NRC. The NRC will then work with FEMA, the State, plant operator and other stakeholders to address and identify deficiencies.

While we are not at this point in the process regarding Indian Point, we are, of course, familiar with the issues recently raised by Mr. Witt's report as well as other issues raised by FEMA, and we will closely monitor steps being taken in the coming months by FEMA, the State and counties to address those concerns.

One of the issues raised in the Witt report involved emergency preparedness following a terrorist attack. Emergency plans are intentionally broad and flexible to assure a wide spectrum of events, including those involving rapid large releases of radioactivity, can be responded to effectively. Plan responses are not predicated on the specific cause or probability of an event. Rather, emergency planning assumes the improbable has occurred, and develops a response to address the consequences of potential releases. Whether releases occur as a result of terrorist acts or equipment malfunctions, emergency plans provide an effective framework for decision-making and response.

Effective communications with stakeholders is an important element of all of our regulatory activities. For example, over the past several years we have conducted numerous meetings near Indian Point to inform the public and seek views on the heightened oversight we have been providing that facility. Addressing the desire of local officials to more frequently and directly communicate with NRC on emergency preparedness, as reflected in a GAO study on Indian Point in 2001, we stepped up our interactions with county emergency preparedness professionals. We have supported workshops, meetings and other activities addressing emergency planning issues such as potassium iodide use, dose assessment and the like. We will continue these efforts, particularly in light of the current situation where important specific issues have been raised.

Mr. Chairman, I have discussed the many steps NRC has taken to strengthen security and address emergency preparedness issues which have emerged since the September 11 attacks, steps taken to communicate with stakeholders on these important issues.

Mr. Chairman, this concludes my remarks, and I look forward to answering any questions you may have.

Mr. SHAYS. Thank you very much.

[The prepared statement of Mr. Miller follows:]

STATEMENT SUBMITTED  
BY THE  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
TO THE  
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS  
AND EMERGENCY MANAGEMENT  
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
UNITED STATES HOUSE OF REPRESENTATIVES  
FOR THE HEARING ON  
EMERGENCY PREPAREDNESS AT THE INDIAN POINT ENERGY CENTER

SUBMITTED BY  
HUBERT MILLER, REGIONAL ADMINISTRATOR  
REGION I

Submitted: February 25, 2003

**Introduction**

Good afternoon, Mr. Chairman and members of the Subcommittee. It is a pleasure to appear before you today to discuss the role that the Nuclear Regulatory Commission (NRC) plays in the development and assessment of radiological emergency preparedness programs at nuclear energy facilities and the status of NRC reviews and oversight of Indian Point.

**Radiological Emergency Planning and Preparedness**

Following the accident at Three Mile Island in 1979, the NRC reexamined the role of emergency planning for protection of the public in the vicinity of nuclear power plants. Our reexamination pointed out the need for improved planning by Federal, State and local governments to respond to possible reactor accidents. To compel this improvement, we implemented new regulations that establish emergency planning standards and define the responsibilities of nuclear power plant licensees, as well as State and local organizations involved in emergency response. The regulations now require that emergency plans be prepared for evacuation or other actions to protect the public in the vicinity of nuclear power plants.

For planning purposes, we have defined a plume exposure pathway emergency planning zone covering an area about 10 miles in all directions around nuclear power plants and an ingestion pathway emergency planning zone covering about 50 miles in all directions around nuclear power plants. Each licensee has its own emergency plan for the site of the plant, and State and local governments have detailed emergency plans for the offsite plume

and ingestion emergency planning zones. These emergency plans are tested in frequent small-scale drills and periodic full-scale emergency exercises that simulate a serious reactor accident. The plans and their implementation are periodically reviewed to confirm that plans and preparedness are being maintained in a manner that will ensure that adequate protective measures can and will be taken to protect the public in the event of a radiological emergency.

Federal oversight of radiological emergency planning and preparedness involves both the Federal Emergency Management Agency (FEMA) and the NRC. Consistent with President Carter's directive in December 1979, FEMA takes the lead in initially reviewing and assessing offsite planning and response and in assisting State and local governments in the development and maintenance of their plans and preparedness, while NRC reviews and assesses the licensee's onsite planning and response. FEMA makes findings and determinations as to the adequacy and capability of implementing offsite plans and communicates those findings and determinations to the NRC. The NRC reviews the FEMA findings and determinations and in conjunction with the NRC's onsite findings, makes a determination on the overall state of emergency preparedness. These overall findings and determinations are used by the NRC to make radiological health and safety decisions in the issuance of licenses and in the continuing oversight and regulation of operating reactors. Periodic re-reviews and exercises serve to ensure that plans and preparedness are maintained and that changing circumstances are appropriately taken into account in planning.

I must emphasize that the primary responsibility for the review and assessment of offsite plans and preparedness resides with FEMA. However, if FEMA informs the NRC that an emergency, an unforeseen contingency, or some other matter would prevent FEMA from

making findings and determinations in a timely manner, the NRC, in consultation with FEMA, might initiate its own review of offsite emergency preparedness.

Regarding certification, NRC has no requirement for certifying offsite emergency preparedness programs. State and local offsite emergency plan formal approval derives from a process developed by FEMA and codified in FEMA's regulations at 44 CFR Part 350. If in implementing this process for a particular set of State and local emergency plans, FEMA finds deficiencies or problems of such significance that FEMA is not satisfied with the adequacy of the offsite plans or preparedness, FEMA will inform the Governor of the State and the NRC. The NRC will then work with the reactor licensee and with FEMA, and FEMA will work with the State to address the identified deficiencies or problems.

**Indian Point**

We have maintained heightened oversight of the Indian Point 2 facility since an event in which a steam generator tube failed in February 2000. The concerns from that event were technical and managerial in nature, but there were several emergency response issues that surfaced from the event. We have closely monitored the Indian Point station's improvement programs through expanded inspection efforts and regulatory performance meetings. At the end of the third quarter of 2002, we concluded that previously identified weaknesses had been substantially addressed. However, much work remains to be done at Indian Point, and we expect to maintain our heightened oversight of Indian Point 2.

The most recent emergency exercise at Indian Point occurred on September 24, 2002. This biennial full-participation exercise reflected positively on the Entergy management team and the ability of the emergency response organization to effectively implement the onsite emergency preparedness program. While some areas for improvement were identified, we judged the overall licensee performance to be satisfactory.

Emergency preparedness has been a matter of increased public interest since the terrorist attacks of September 11, 2001. A number of questions have been raised about whether the counties' evacuation plans were workable and considered terrorism. While for many years, all nuclear power plants have been required to have security programs sufficient to defend against violent assaults by well-armed attackers, numerous additional steps have been taken since September 2001 to thwart terrorist acts. Emergency preparedness programs are designed to cope with a spectrum of accidents including those involving rapid, large releases of radioactivity. Emergency preparedness exercises have invariably included large releases of radioactivity that occur shortly after the initiation of events. Necessary protective actions and offsite response are not influenced by the cause of accident. Emergency planning is not predicated on a determination of the probability of a given accident sequence. Rather, emergency planning assumes the improbable has already occurred and develops a response to address the consequences of potential releases. Whether releases from the plant occur as a result of terrorist acts or equipment malfunctions, emergency plans guide decision makers and responders in the same way.

The Governor of the State of New York recently received a draft report from James Lee Witt Associates, LLC, regarding emergency preparedness at Indian Point. The NRC has received a copy of the draft Witt report. The matters addressed in the draft report in large

measure relate to offsite planning and preparedness, which, at least in the first instance, are matters within the purview of FEMA. While any judgement as to the overall state of emergency planning and preparedness is for the NRC to reach, in keeping with the longstanding understanding between FEMA and the NRC, we look initially to FEMA for its views on the draft report relating to offsite preparedness. The NRC will work with FEMA and other Federal agencies, as well as the licensee for Indian Point 2, New York State and county officials, in continuing efforts to ensure adequate emergency planning and preparedness.

Following the attacks of September 11, 2001, the NRC took a number of actions that required NRC licensees to remain at a heightened level of security. On February 25, 2002, the NRC issued Orders to all power reactor licensees requiring that they incorporate specific interim compensatory measures (ICMs) into their security and emergency preparedness programs.

#### **Conclusion**

I have summarized, in general terms, the NRC's requirements for radiological emergency planning and NRC's role in reviewing emergency preparedness programs for nuclear energy facilities. I have also touched upon the NRC's continuing heightened oversight of the Indian Point 2 facility and the status of NRC's assessment of the licensee's emergency preparedness. I appreciate this opportunity to appear before you today and I welcome the opportunity to respond to your questions.

Mr. SHAYS. I am going to call on Mr. Turner to start us off and then go to Mr. Tierney, and then to Mr. Janklow, and then to our colleague Mrs. Kelly, and then I will have questions. I am just going to tell you the two questions, Mr. Conklin, I want you to think about. One is, what in the Witt report's recommendations validated FEMA's emergency preparedness findings?

And I am also going to ask—this is more important to me—I am taking this out of a letter addressed to me of February 12 from the NRC. The question is: Does FEMA agree with the NRC that the Witt report gives undue weight, to potential terrorist attacks?

I am going to ask your opinion about that after others have gone. So at this time, Mr. Turner, you have the floor.

Mr. TURNER. Thank you, Mr. Chairman.

I appreciate your presentation today and the information that you are providing us. I think we all know the importance of the issue of preparedness not only for the issue of emergency response, but in advance in looking at the types of threats that these facilities may face.

One thing is for certain: In looking at the information that we have received concerning possible terrorist threats to the United States, we can't say that we don't know that nuclear power plants may be a target. The information that we have indicates that, in fact, they have been viewed as possible targets by terrorists. And also knowing the issue of the occurrence of September 11, we know that our need for preparedness is very high, because we can no longer say that it won't happen here.

In looking at the issues of your statements, one of the considerations that I would like to hear from Mr. Miller, when you are talking about issues of prevention, largely in your testimony I heard statements about an attack that might occur, perhaps a para-military or guerilla-type terrorist attack. But I have not heard of the type of security enhancements or issues are you looking at for prevention that might include civil reengineering of facilities to look at more catastrophic attacks like we saw on September 11.

Mr. MILLER. In the few days immediately following the September attacks, in addition to requiring that the security level at all plants be raised to the highest level, the Commission chartered studies to look at the potential effects of attacks on the plant. We have conducted vulnerability assessments over these past several years. These are assessments that take some time to complete.

In the assessments that have been done, I cannot provide details here, we have not identified anything, beyond the steps that we have ordered the plants to take, which are clearly needed to address extreme events. I think it is significant that we have issued orders which have required significant increases in patrols and the strengthening of the physical barriers at the plant where that is needed. We continue this assessment working with the Department of Homeland Security, and the Department of Defense, Intelligence Community. We continue our assessment of the threat environment. If at any time in these studies we determine that more is needed beyond what we have already required, we will take steps.

Mr. TURNER. Well, I guess just in listening to your testimony, and in testimony that we have heard in previous hearings before this subcommittee, I think there are serious concerns about the

vulnerability of plants, and I would hope that your process is not one that you view as complete, but ongoing, and that if there are issues that people are openly discussing that need to be addressed, we would certainly hope that you would be looking to address them.

In looking at your written testimony, I was also slightly concerned that you indicate that—just to read this paragraph. It says, it is not likely that protective actions would need to be taken for the entire 10-mile emergency planning zone, even for a significant release. A radioactive plume from a nuclear plant does not move in all directions at once, but travels in the general direction to which the wind is blowing. As a result, only a small fraction of the population in the emergency planning zone would be in the pathway of the plume.

I doubt that the population in the area of an emergency would feel the same way as that paragraph is written, that their risk of any need of evacuation is minimal. Could you comment on that in your planning with respect to the fact that you are not likely to be able to just evacuate slices of an overall pie?

Mr. MILLER. What we are speaking to in that part of the testimony is what is required. If you look at releases from the plant, if you look at the weather conditions and the like, and the direction of the travel of any radioactive plume, it is pretty clear that the areas that must necessarily be evacuated are in a direction that corresponds with the direction the wind is blowing. I recognize that people outside of that zone might, on their own accord, choose to—some may choose to evacuate, but what we are speaking to there is just the physical reality that a plume will go in a certain direction. And the assessment that is done by the offsite officials is, in fact, of what the weather conditions are, where are the areas that are potentially exposed to radioactivity. It is those areas that are targeted and given priority in any evacuation. And in most instances you will not need to evacuate a whole 10-mile area to protect the public.

Now, it is a normal process, if there is uncertainty, a standard approach is to evacuate within 2 miles in all directions, and 5 miles downwind. That is a default position if there is uncertainty. But the point is that it is not necessary in all cases to evacuate the full 10 miles.

Mr. SHAYS. Mr. Tierney.

Mr. TIERNEY. Thank you, Mr. Chairman.

Mr. Miller, I would like to explore with you a little bit on the licensing and relicensing process here. I would like to understand it a little bit better if I could.

In determining the level of the security that these establishments need, my understanding is that first the Nuclear Regulatory Commission promulgates the design basis threat; is that right?

Mr. MILLER. That is correct.

Mr. TIERNEY. As I understand it, the current design basis threat requires protection against a small group of skilled or well-armed outsiders aided by one insider, a single insider acting alone, and a four-wheel-drive land vehicle bomb. Have I got that correct?

Mr. MILLER. Well, I won't comment on the specific attributes of the current design basis threat.

Mr. TIERNEY. Because?

Mr. MILLER. It is sensitive information. But it does involve a violent attack by well-trained, well-armed attackers, and it does involve a vehicle bomb. But I need to hasten to point out that the steps that we required be taken in the order that we issued raised the level of security at these plants that goes well beyond the current pre-September 11 design basis threat.

Mr. TIERNEY. Let me break it down. First of all, you said they are sensitive. Are they classified?

Mr. MILLER. It is sensitive information that is not classified, but it is what we call safeguards information—sensitive information, the specific attributes, the broad definition of what the design basis threat is, contained in our regulations, and it is what I have just described.

Mr. TIERNEY. Well, do me a favor. Give it to me again, because it was, before September 11 at least, the way I described it; am I right?

Mr. MILLER. The details I can't confirm, but it is in concept, it is this violent attack by well-trained, well-armed attackers.

Mr. TIERNEY. And one insider.

Mr. MILLER. And aided by an insider.

Mr. TIERNEY. Another aspect of that was a single insider acting alone. You have provisions to deal with no outsiders, but someone on the inside.

Mr. MILLER. Again, I want to be careful about the specifics, but in concept it is an insider. And this is what—this is among the things that I have talked about earlier, what we are examining and what the Commission is right now engaged in looking at, in examining the current threat environment, along with, in concert with the Department of Homeland Security, the Department of Defense, and the Intelligence Community, to determine what is the proper current design basis threat.

Mr. TIERNEY. I guess what I am trying to get at, Mr. Miller, is where we are in this process? Have you formally changed it from what it was before September 11, 2001; are you still in the exploratory stages and trying to determine what it is going to be?

Mr. MILLER. Within the next several months we expect to issue new requirements in this respect.

Mr. TIERNEY. But there have been no new requirements issued since September 11, 2001, up to this point in time?

Mr. MILLER. Well, what I am saying is that we have issued new requirements. They are prospective requirements. We knew it would take some time to work and coordinate with the Defense Department, the Intelligence Community and so on, to pin down precisely what the current threat is, but we knew we couldn't wait. That is why we raised the bar. That is why we stipulated or required that plants upgrade security to a level that is beyond, well beyond, what existed under the old design basis threat prior to September 11.

Mr. TIERNEY. When do those new provisions go into effect?

Mr. MILLER. They have been in effect. They were issued in an order—the order was issued in February of last year.

Mr. TIERNEY. February 2002.

Mr. MILLER. February 2002. That followed a series of threat advisories that we issued on a very immediate basis to raise the level of security at the plants.

Mr. TIERNEY. Every one of the plants across the country is now required to meet these?

Mr. MILLER. All the plants were required to come into compliance with that. We have done inspections to determine that those enhancements have been put in place.

Mr. TIERNEY. Now, in the process that you used in determining that new design basis threat, did you consider the likelihood of an event or a potential severity; is that the process that you went through?

Mr. MILLER. There was a very systematic review of the potential vulnerabilities of the plants, and that order was developed, in fact, considering the kinds of attacks that could be made on the plants and the areas that needed to be strengthened. But it was already at a very high level. It was strengthened following that order.

Mr. TIERNEY. In December of last year, the Commission indicated in one of its decisions that it doesn't consider the impacts of terrorism when making a licensing decision. Is that still the case?

Mr. MILLER. I am sorry. I can't answer that question. I am not an attorney, and I am not the specialist in this area. So what I would prefer to do is to—if you will indulge me, provide an answer—

Mr. SHAYS. Let me—the gentleman speaking to you was?

Mr. MILLER. This is Mr. Chandler. He is from our Office of General Counsel.

[Witness sworn.]

Mr. SHAYS. Please have a seat. It is my fault. I should have said if anyone might respond, they should stand in the back and raise their right hand.

Let me just have you give your full title, and if you would give a card to the transcriber.

Mr. CHANDLER. I will. My name is Lawrence Chandler. I am Associate General Counsel for Hearings, Enforcement and Administration at the Nuclear Regulatory Commission.

Mr. SHAYS. Thank you. Feel free to respond to the question.

Mr. TIERNEY. Let me state it again. My question was that when the NRC is issuing an order, or when it is making a decision about licensing, do you take into consideration the impacts of terrorism and the readiness of that particular facility to deal with terrorism?

Mr. CHANDLER. The Commission's decisions last December focused on the issues that were presented by various parties in several different proceedings. The Commission's decision basically concluded that it was not necessary, in the context of NEPA, National Environmental Policy Act, to consider the acts of terrorism. It also reiterated that acts of enemies of the United States were beyond the scope of requirements under the Commission's regulations.

Mr. TIERNEY. I understand the decision in December was more along environmental issues than anything else. But it was a sweeping statement that was made in those decisions. So what I am getting from you is you are saying that the NRC does not feel that in making licensing decisions, that it should take into consideration a facility's preparedness to deal with terrorist situations.

Mr. CHANDLER. Beyond the scope of those requirements set out in 10 CFR Part 73, which are the basic safeguards and physical protection requirements. Again, it was the acts of enemies of the United States that were raised in the context of the issues before the Commission, as well as the specific context of consideration for NEPA purposes that the Commission responded to.

Mr. TIERNEY. What exactly, in the area of terrorism, or preparedness to deal with terrorism, what, if anything, is considered by the Commission when it deals with licensure?

Mr. CHANDLER. Well, I think if you look at terms that you were describing again in your question of Mr. Miller a moment ago with respect to the design basis threat, there are elements of that I think you would fairly characterize as including aspects of terrorism.

Mr. TIERNEY. You must meet those and meet the ability to deal with those?

Mr. CHANDLER. Again, that is part of the design basis threat.

Mr. SHAYS. Thank you.

We will have a second pass at these witnesses.

Mr. Janklow. Governor.

Mr. JANKLOW. Thank you very much, Mr. Chairman.

You know, as I read your testimony, gentlemen, I am a little bit puzzled. As I have listened to and read Mr. Conklin's testimony, it appears that—and people are talking about Indian Point a lot. It appears letters of agreement have been submitted, but they haven't been finalized. It appears that, as to evacuations, the plans don't yet incorporate data from the updated evacuation time estimate studies that reflect the new demographics as well as the shadow evacuation. It appears that the joint new conference procedures really don't work very well, but they are working on upgrading them. It appears that the procedures for the schools in the county are adequate, but that the individual school districts, preschool and day care centers haven't yet submitted for FEMA review for consistency and completeness.

Sir, what is the problem? What is holding it all up from being done from your perspective, in just a couple of sentences. Whose fault is it?

Mr. CONKLIN. Well, the responsibility for providing that information rests with the State and county folks working together to forward that information on to FEMA.

Mr. JANKLOW. Is this a turf battle of some type, or is it a legal battle, or don't they have the resources? Isn't it important? Or what is the reason it hasn't been submitted?

Mr. CONKLIN. You would really have to talk to the State folks to really get the reasons.

Mr. JANKLOW. Have you folks ever talked to them and asked them?

Mr. CONKLIN. Yes.

Mr. JANKLOW. What do they tell you is the reason?

Mr. CONKLIN. Our instructions we have had, it has been a resource problem for them, because of the number of plants in the State, the number of nuclear plants in the State, the amount of preparedness activities that they do undertake in the areas around those nuclear plants.

Mr. JANKLOW. If they say it is a resource problem because of the number of nuclear plants, how do we fix the problem? What do we do to fix the problem? Or do we ask the terrorists to wait until we can get more resources?

Mr. CONKLIN. The provision of resources would—could help the problem. Historically in the REP program, I am speaking programwide now, the resources that come to the county and local officials and in some cases the States come from the licensee. They help out with the offsite planning and actually fund some of the activities in those offsite areas.

Mr. JANKLOW. Mr. Miller, you talk about doing these mock exercises, and I realize you can't really use much of an element of surprise when you are trying to surprise people that are armed. You can run into problems. But, you know, on a chalk board, when you put up Xs and Os, all plays score touchdowns, things work on the board. In reality, how often have your mock exercises determined that what it is that you were doing in terms of defensive preparedness, what percent of the time aren't the defenses effective?

Mr. MILLER. I can't give you a figure off the top of my head, but I do want to comment on one thing. Folks talk about—or people talk about failures. I think it is important to understand that these are mock assaults that are commando-style attacks on the plant. The attacking—the adversary team has intimate knowledge of the vital equipment in the plant and the various features of the security program.

So it is—they are given a very strong advantage in these assaults. The purpose is to identify those areas of potential weakness, areas where the plant can be strengthened. I think the notion that these exercises, as they are performed, reveal a fundamental flaw and a fundamental problem with the security program is, I think, misleading. In all of these instances, immediate steps are taken to address any areas or to strengthen the areas that are identified.

Mr. JANKLOW. How do you mock-exercise flying an airplane into the facility?

Mr. MILLER. We don't simulate that.

Mr. JANKLOW. How did you deal with it? Are these plants capable of dealing with that type of attack?

Mr. MILLER. As I mentioned earlier, we have been conducting and are still conducting assessments of extreme events such as that. And we have not completed those studies, but we are aware of what the preliminary indications are, and they, as we said in our testimony, indicate that the current planning basis is still intact—I mean, that—the assumptions of emergency planning have not been shown to be flawed or in need of change as a result of these studies we have done.

Mr. JANKLOW. How many plants do we have in the United States, sir?

Mr. MILLER. I believe there are 103.

Mr. JANKLOW. Of those, have you been able to determine yet what number of those would be able to withstand the flight of an airplane, a suicide mission into the plant?

Mr. MILLER. We are doing those reviews. I think that it is clear that these plants were not designed specifically to withstand an attack by a modern-day jetliner—but they were designed to with-

stand very extreme events, hurricanes, tornadoes, missiles that can be thrown at a plant by a tornado, very extreme events. They are not soft targets, they are hardened structures. It is our belief that there is reasonable assurance.

Mr. JANKLOW. Let me ask you this, sir. If I had children or my grandchildren live within 5 or 6 miles of a plant downwind on a given day, how much reason would I have to be concerned that something like a—forget an airliner, let's say a G-4, G-5 Falcon 50-type aircraft would be deliberately flown into the facility at 500 or 600 miles an hour, head on, by a suicide mission? What—

Mr. MILLER. From what I understand about these studies, they indicate that these facilities are hardened sufficiently to resist attacks of that sort. We are still looking at this. And as I said before, we have not identified anything that would require us to change our planning basis.

It doesn't say anything about the prevention that exists with respect to making the skies more secure through FAA and the steps that are being taken there.

Mr. JANKLOW. One more question, sir. Thank you. I appreciate both being very responsive. Mr. Miller, and Mr. Conklin, how long will it be until your assessments are done, Mr. Miller, and how long will it be, Mr. Conklin, until you are satisfied that all of the communities that need to submit their plans so that they can be implemented if necessary will be done?

Mr. MILLER. Well, if you are talking about the assessments that are being done right now in connection with the specific issues raised by the Witt report and by FEMA, that is a process that FEMA has the lead on and has engaged with the State, and our role is to monitor that process. And if it comes to an impasse, if it does come to an impasse, then it would come to the NRC.

But we have not—at this point we are still monitoring the process. At this point it is still FEMA's lead.

Mr. SHAYS. I think I'd better move along here. Do you have a quick answer, Mr. Conklin?

Mr. CONKLIN. I would just say right now it's too difficult to tell. We gave them a May 2 deadline to get the information, and when they get it in we will review it and then move on from there based on what is in the information.

Mr. SHAYS. Before I call on Mrs. Kelly, I will just make the observation that we have problems in some cases with the plans, but the one challenge that I think a lot of people have is the people who need to see these plans, the public, do not. They're not aware of these plans and they're the ones ultimately that are impacted by it.

Mrs. Kelly, you have the floor. Again, welcome.

Mrs. KELLY. Thank you very much Mr. Chairman.

Mr. Conklin, you mentioned May 2. Two weeks ago I asked FEMA—gave them a 30-day deadline to work with our local officials, and I'd like to know what FEMA has done to comply with the request for a report by the end of this month on your Agency's efforts to respond to the local concerns and work with the local officials. I gave you until the end of this month.

Mr. CONKLIN. Yes, ma'am, and we are hard at work on that. Joe Picciano, who was at the last hearing, has written to the States

and asked them—or the State of the New York, and asked for meetings and activities to sit down with them and the local officials to work through the information. We have drafted a reply to your request and are working that through the system to get you a timely reply, but we are working very diligently with the State and county folks right now to address these issues.

Mrs. KELLY. As you know, the Witt report was finalized last week and the primary conclusions in the Witt report have not changed since the draft was related in January. What have you done specifically to address the additional comments that the Witt report spoke about with the impact of a—that a terrorist attack could have on your emergency plans?

Mr. CONKLIN. I have not had a chance myself to review that report. My understanding is they came on either Friday or today. It's about a 68-page addendum to the existing report. There were some minor changes made to it, but I have not had a chance to look at the overall report to see if there's been any changes to the major findings yet. So I'd like to get back to you, if I could, because right now I haven't seen the final report to evaluate it in detail.

Mrs. KELLY. So the answer is, so far as you know, nothing; FEMA's done nothing?

Mr. CONKLIN. Not with the final report. We have looked at the draft report and incorporated that into our State exercise—and our exercise report and cross-referenced the findings of the Witt report in it with findings that we had developed through our plan reviews and exercise reviews, and we've gone that far and we're looking at it from a national program perspective.

Mrs. KELLY. Have you done anything about the comment in the Witt report that speaks of the fact that high-population areas have different requirements on an evacuation plan than otherwise?

Mr. CONKLIN. I have asked the contractor to look at the literature and the science, the social sciences behind those kinds of activities, to see what we could find in the literature that would support those kinds of comments and what we would or should do to take and address those in our plans and procedures and our guidance.

Mrs. KELLY. Mr. Conklin, FEMA does a great job in many instances with natural disasters. The concern of my constituency, and I'm sure that the chairman's constituency, have the same problems, this could not perhaps be a natural disaster. I wonder if you'd please detail the internal process that your Agency goes through to determine that an emergency plan provides reasonable assurance to those of us who live quite close to these plants that our health and our safety are protected. It's my understanding a determination is made by the region and then is sent up to the headquarters; is that accurate?

Mr. CONKLIN. That is accurate. There is a regional assistance committee in our nine regions that have nuclear power plants, and when these plans are reviewed they're reviewed by more than just FEMA. They're reviewed by folks from the NRC; the Environmental Protection Agency; the U.S. Department of Agriculture; Health and Human Services; and a number of other Federal departments and agencies. So we look at these plans and procedures in great detail at the regional level, figuring that those folks on the

regional assistance committee are closer to the State and locals there, so that if they have questions, they could then go back and talk with them about the plans and any issues they may identify.

Once they have finished their review, they generate a report, and that comes to headquarters for us to then look at and ask any further questions. And then based on that, we come to a determination.

Mrs. KELLY. One of the things that you brought up in your testimony was a discussion about the communications that occur between the plant, the local officials, and the county—the surrounding county officials. I have some great concern about that because that was pointed out to be a problem in the area of the Indian Point and Millstone plants. Do you want to address anything? Have you done anything within the framework that I'm requiring of you; with the 30-day framework that I am requiring of you, have you done anything to address that problem, the problems of communication between each other, these different areas?

Mr. CONKLIN. It's my understanding that following the GAO report, which had a recommendation for improved communications between the Federal officials and the county officials, that site points of contacts were established in the region to deal specifically with those county folks around those plants, and that since then, the FEMA folks met with county folks, with the State folks. They set up a—I don't think it was a written agreement, but they set up an agreement whereby they would work together and meet together as a group versus FEMA going to State, State to county, and that kind of thing. So it's my understanding—and this happened prior to me coming on board; so it's my understanding that they've worked out that issue and that communications have been increased and improved.

Mrs. KELLY. They may have been improved, Mr. Conklin, but I still understand from my first responders that their radio capability is that police can't speak on the same frequency as the fire people. The fire people can't speak on the same frequency as some of the people at the county level, and I know that this is a problem throughout the United States. It's not just my nuclear plants; it's other nuclear plants.

Is FEMA addressing the problems that we are having with allowing these first responders to any emergency to be able to talk with each other? I understand it's so bad in some areas, and especially with the World Trade Center, that some of the people down on the ground trying to direct people up in the towers didn't have the right radio frequencies for those particular companies that were up in the towers. That needs to be addressed. Are you doing something?

Mr. CONKLIN. Yes. There is—and I am not—I have not been involved in that process. There is an Interoperability Assessment Board [IAB], I think that's the right title for it, that is looking at this issue nationwide not only for the power plants but for any responses, whether it's hurricanes, tornadoes. It's a nationwide effort, and it's been going on for about—years, if I remember properly.

Mrs. KELLY. Mr. Conklin, I would like you to include something to address that question in the 30-day report. Thank you.

Mr. CONKLIN. Yes ma'am.

Mrs. KELLY. Thank you very much, Mr. Chairman.

Mr. SHAYS. Thank you. The next round, I think we'll probably have to go a 10-minute round, and I apologize to the panels that will follow. I'm doing a little wrestling here about getting—by the NRC somehow making the assumption that if it's a nuclear attack on a plant, that the consequences are no different than any kind of release. Mr. Miller, you've got to walk me through the logic there.

Mr. MILLER. One of the things you said in your remarks—

Mr. SHAYS. A terrorist attack.

Mr. MILLER [continuing]. Which I think is a very fair question relates to the impact offsite of a terrorist attack. In our comments, the comments that you referred to, we have been focusing on the part that we're responsible for, which is the safety of the reactor and how the reactor would respond. We are focused on the securing of the plant itself. I think it is a fair question to ask what impact a terrorist attack would have on protective measures that may be taken offsite. This is FEMA's area, of course. It's their lead. I would expect that there would be discussion on this as these plans are worked out not only in the Indian Point case but in other cases. So we were not intending in our comments to speak really to this offsite aspect.

Mr. SHAYS. But with all due respect, when we wrote NRC a letter in January expressing concern about the Witt report, in one paragraph from the chairman of the NRC, he says, "While we appreciate and recognize the effort that went into the draft report, we believe the draft report appears to give undue weight to the impact of potential acts of terrorism on emergency planning preparedness." And further down it says, "Necessary protective actions and offsite response are not predicated"—"offsite response are not predicated on the cause of events. Whether releases from the plant occur as a result of terrorist attacks or equipment malfunction, emergency plans guide decisionmakers and responders in the same way." I just think that's blatantly untrue.

Mr. MILLER. That comment is based on the fact that no accident is going to follow a script, and so emergency plans have to be broad and flexible. They have to be designed to deal with a whole spectrum of things that can occur. It's a performance-based approach—

Mr. SHAYS. I understand what you're saying—

Mr. MILLER. So that—that comment is—

Mr. SHAYS. Irrelevant?

Mr. MILLER [continuing]. Very much based on what we know has been done to secure the plants.

Mr. SHAYS. Mr. Miller, do you believe it is relevant to say that a terrorist attack has no different consequence than any other type of attack? Do you think that implication makes sense to you?

Mr. MILLER. I think with respect to the plant itself, the thing that we're talking about, which is the potential for disruption of the reactor and the reactor core, cooling of the core and release of radioactivity, our approach in emergency preparedness has always been to be aggressive in the way emergency planning is done. So we have always required there be large releases of radioactivity that developed within a short time, and the plans have always

been geared toward large releases. So in that sense we believe that it doesn't make a difference as far as what happens onsite.

Mr. SHAYS. I think the better answer would have been that there obviously is a difference and we're looking at it. To say anything other than that scares the hell out of me, because you guys are in charge, and we've had 4 years of hearings about what terrorists can do and how they can do it, and frankly it defies my sense of logic, your answer. I realize your chairman said it, and I'm putting you in an awkward circumstance, but I would have loved something—

Mr. MILLER. Well, may I say, Mr. Chairman—and I've been in numerous meetings since we issued that letter, and what I sense is that people understand the NRC to be downplaying somehow the effects of terrorism or the potential for terrorism, and in fact—

Mr. SHAYS. Not just the potential, but a terrorist attack has a different impact. It can result in things that we never anticipated before, and for instance, even your reference to hardened sites, what is a hardened site? What is in that hardened site that is protected?

Mr. MILLER. What we're referring to is, first of all, the containment structure itself. These are structures that have to be designed to withstand very significant external—

Mr. SHAYS. Right.

Mr. MILLER [continuing]. Impacts, you know; hurricanes, tornadoes, if you will.

Mr. SHAYS. Right. What is in that site? It is basically the nuclear operation, the fuel itself, and so on. It is a fact, terrorists know this, the control panels aren't necessarily inside. The ability to command structure is not necessarily in a hardened site throughout the country; isn't that true?

Mr. MILLER. Well, Mr. Chairman, this is why our requirements have always been for the plants to be defended against violent attacks, and that's all been strengthened—

Mr. SHAYS. First off—

Mr. MILLER [continuing]. Since the—

Mr. SHAYS. First off, I just need an answer to the question and then you can tell me all the other things. The implication that somehow the control panels and so on would be in hardened sites is not accurate; is that true? They aren't under hardened sites; is that correct?

Mr. MILLER. They're not hardened in the sense that they're specifically designed for, you know, airplane crashes and the like.

Mr. SHAYS. Thank you.

Mr. MILLER. But having said that, I mean because of the necessity for these to be designed to withstand these many other phenomena, they're not soft targets, and I think it's important for the public to recognize this, because I think without this understanding, there is a great deal of concern that can—

Mr. SHAYS. My time is up. We're going to do 10 minutes the second time through. I'm just going to say to you, Mr. Miller, we're just scratching the surface here, but the way you're answering the questions, it gives me the feeling that we're continuing to do something in this country that I deeply regret. The terrorists know how vulnerable sites are, whether they're chemical sites, or nuclear

sites. They know. They know what to do. These are not people who are just going to blithely walk up and try something. They plan it out, they know where they're vulnerable. So when we discuss these issues, the only thing we're keeping it from is the American people. The terrorists already know. They already know that when you use the term "hardened sites," that's the concept that we have really protected the plant where the nuclear fuel is and so on. The terrorists know that the operations aren't "hardened," as you use that term. We try to protect them, but they are clearly going to have impact if they choose something different that's under the cone. I guess I just regret that we can't have an open conversation here.

Mr. MILLER. Well, Mr. Chairman, I'm—and with all due respect—the reason why I'm pointing this out is I would not want the public to believe this is business as usual since September 11. Enormous steps have been taken to strengthen the security of these plants.

Mr. SHAYS. That's different, and that's an honest answer. We are making and taking a lot of steps, but they remain significantly vulnerable to terrorist attacks. That's the reality. Maybe in a few years they won't, but right now they are, and that's why our talking about an evacuation plan even has more significance. I just would ask you, Mr. Miller, tell me the number of times the NRC has basically suspended the operation of a plant because we haven't liked the evacuation plan.

Mr. MILLER. I don't believe we've done that, but if the conditions exist that is called for, we will.

Mr. SHAYS. Well, my logic, again, is there has had to have been sometime during the course of our history where the plans weren't really that good and we probably should have temporarily suspended a plant and we didn't, which makes me a little leery of our oversight.

Mr. MILLER. I believe in the case of Turkey Point, several years ago, after one of the hurricanes, there was a period where the plant was shut down. The company chose to do it, but we felt it was important to take that step because there was a question about emergency preparedness.

Mr. SHAYS. We're going to go back to Mr. Turner and then Mr. Tierney for 10.

Mr. TURNER. Thank you very much, Mr. Chairman. I want to join with you in your concern with the language that we're hearing today. Even being a new member of the committee and with the limited number of hearings that we have heard on this issue, I can tell you, Mr. Miller, that we have heard previous to your testimony that the FAA rules may not be enough to prevent a second attack; that the nuclear plants in this country may be structurally vulnerable. And what I hear from you—if I was asked when I leave here by my constituents what your testimony was—is that we're still conducting a review, we're still looking at this issue, but so far we've not seen anything to change our planning.

And to look at your written testimony, the extent to which I would characterize your planning is that you are totally evacuation focused. You also referenced the FAA rules as being something that might stop the occurrence of this type of an attack. It's of a concern to me because it sounds as if people who are testifying before this

committee prior to your attendance today are recognizing a greater need for action from your Agency than perhaps your Agency is recognizing. If indeed with what you see today, there is no change in your planning process and it is totally focused on evacuation, I would join the chairman in my concern that the public has probably significant concerns that your Agency needs to look at the obvious; which is, we know that we are vulnerable, that our plants are vulnerable, and that there has to be some actions that can be taken besides just looking at issues of how do we get the public out of the way.

Mr. MILLER. I'm not going to sit here, and nobody can sit here and give you absolute assurances that there's no risk. I mean I'm not saying that. But if I were a member of the public, I would be concerned if it were couched the way you phrased it, which is—

Mr. TURNER. That's how I heard it at the—

Mr. MILLER [continuing]. Of we're not doing any planning. I have to repeat myself. There are the numerous steps that have been taken: the strengthening of the security forces, the kinds of weapons that are employed, the incredible increase in the—the site access requirements at the plants, numerous other things I can go into. Prudently, we continue to look at this. We continue to assess the vulnerabilities in concert with the Department of Homeland Security and others. And if at any time we identify that there is a vulnerability that needs to be addressed—

Mr. TURNER. But you're saying that so far you've not seen anything to indicate to you that needs to occur? That's what I wrote down—

Mr. MILLER. Beyond the numerous things that we've already done, and I will give you an example. As things that have emerged, such as in the aftermath of September 11, as the security forces have had to work increased overtime, we've seen issues of fatigue, and we're about to address that. There have been issues with respect to the training of security officers, and we're about to address that. So we have taken numerous steps. We continue to look at it as we identify issues and as issues emerge. We're not standing still. We're acting.

Mr. TURNER. From what this committee has heard, I hope that your Agency's position is not that you are finished, as to the extent that your language would leave us with that impression.

Mr. MILLER. That's correct. As I said in my oral remarks and my testimony, we continue to examine this in concert with the Department of Homeland Security and others.

Mr. TURNER. The other issue that I would like to hear Mr. Conklin speak on is when we've looked at the issue of the evacuation and the risk assessment, obviously there are long-term issues with respect to areas that have been evacuated, and I'm unfamiliar with the extent to which your planning goes past the issue of attempting to protect the public by their evacuation and goes into the issue of the emergency response in an area once a release has occurred. If the public is evacuated and your plans work, how far down the path does your plan go in addressing the area that's been impacted?

Mr. CONKLIN. The current plans for those areas, there's a couple plans that come into play. One is the Federal Radiological Emer-

gency Response Plan. That is then supported by the Federal Response Plan and all of the infrastructure that goes along with it. If we were to get to a point where we actually evacuated people and had contamination in an area, we would fall back on and utilize the Federal Response Plan to put together a response that could address whatever contamination is present, develop plans and procedures for removing that decontamination, cleaning the area up, and, as soon as reasonable, returning people back to the area.

Obviously the amount of time that would take would depend on the amount of contamination present, what kind of isotopes are there, what were the kinds of areas that were affected and those—and a lot of site-unique characteristics that would have to take into effect—but we would fall back and use the Federal Response Plan as a responding plan.

Mr. TURNER. Assuming there's an area where there are individuals that cannot return, have you done modeling as to what would be necessary to support a population that has been dislocated?

Mr. CONKLIN. Not specifically to Indian Point. Several years ago I know the EPA did some modeling to determine what it would take to evacuate people, support them, house them, feed them; economic impacts and things like that. But we didn't do it for any particular site.

Mr. TURNER. Thank you, Mr. Chairman.

Mr. SHAYS. Thank you.

Mr. Tierney, thank you for your patience.

Mr. TIERNEY. Mr. Miller, you talked about the hardened sites and I understand that to be generally steel-lined reinforced concrete-type structures?

Mr. MILLER. The containment structures which house the reactor itself, much of the critical equipment is within such a structure.

Mr. TIERNEY. But in many instances the spent fuel is actually kept outside of that in cooling pools; am I right?

Mr. MILLER. Outside containment, yes. But the structure itself, the wall of those pools are in fact structures of the sort you've described; very thick concrete walls, reinforced concrete.

Mr. TIERNEY. What I'm getting at is whether the susceptibility to access them is easier than the main structure itself, and I guess they would be a little less secure?

Mr. MILLER. All of the spent fuel storage pools are within the protected area in what we call the vital areas of the plant, and so they get the same protection that other vital equipment associated with the reactor itself gets.

Mr. TIERNEY. They're not in a hardened site, though? They're in a site that has concrete walls but not necessarily within the hardened site that we talked about for the reactor itself?

Mr. MILLER. The closures are not hardened like the containment building is hardened.

Mr. TIERNEY. Getting back to what we talked about a little earlier about the design basis threat—and you didn't apparently want to be too specific about what your new requirements are—but let me ask you, do they take into account the use of a shoulder-mounted missile? Would they be able to withstand that?

Mr. MILLER. I don't believe I can answer that question. They do look at what is available to terrorists today. Looking at the kinds of armaments, the numbers of attackers, those are all the things that the Commission right now has under consideration, working with the intelligence community, with the Department of Homeland Defense and others.

Mr. TIERNEY. Well, I guess—

Mr. MILLER. Specific attributes I cannot address.

Mr. TIERNEY. We're going to find out one way or the other, so you can give it to us in classified session or—

Mr. MILLER. It would have to be in a session like that.

Mr. TIERNEY. And we have to know and I want to see that, but you keep moving the line on me here a little bit here, I don't think purposely however, but you talked about things that are under consideration, and I'm looking to find out things that are actually implemented as opposed to things you still consider. So when I say something like the shoulder-mounted missile or the 50-caliber sniper rifles that can go right through armor or things of that nature, whatever like that, I'd be interested in knowing whether these specific types of threats are accounted for and what you now require these facilities to be prepared to deal with.

Mr. MILLER. Yeah. That's going to get me into what I don't—or I cannot go into.

Mr. TIERNEY. No. No, but that's where I want to go eventually, and I want to know whether or not you have actually put those requirements into place or whether you still just have them under consideration.

Mr. MILLER. I can't talk about what the threat is and the specific attributes.

Mr. TIERNEY. So backing off of the specifics, let me ask you this: Have you got new requirements in place or are they just under consideration? I thought they had that clarified—

Mr. MILLER. No. As far as the design basis threat, that's the thing that is being evaluated. But I want to reemphasize something I said earlier, and that is that we have not waited for the design basis threat to be redefined. We have put in place numerous measures that enhance the security of the plant; that raise the level of security way beyond what existed under the old design basis—rather, the current design basis threat—the one that existed prior to September 11.

Mr. TIERNEY. And does a plant's ability to live up to those standards or not affect its continuation of licensure or licensure?

Mr. MILLER. Yes, we issued the enhanced requirements through an order.

Mr. TIERNEY. Now, I'm a little concerned, as I mentioned in my opening remarks about the Bush administration's apparent failure so far to provide for us a report on the potassium iodide that was required, concerning the distribution of that. Can you bring us up to date on where we stand with that?

Mr. MILLER. I understand we've—that the National Academy of Science has been asked to look at this, but I don't know the details. We'd be happy to provide that information to the subcommittee if that's acceptable.

Mr. TIERNEY. All right. Well, the whole report was due December 12. That clearly didn't happen, and my understanding was they weren't even asked for the—the Academy of Science wasn't even asked by them for the report, right—or to start the report?

Mr. MILLER. I'm looking for somebody who can answer that question. I can't answer that question.

Mr. TIERNEY. Somebody in the back seems to know the answer. We apparently cleaned out your entire office to join us here today.

Mr. SHAYS. Let me ask, is there anyone else I need to swear in? [Witness sworn.]

Mr. SHAYS. Would you state your name and your position, please.

Ms. MILLIGAN. My name is Patricia—

Mr. SHAYS. A little louder. Please put the mic up.

Ms. MILLIGAN. My name is Patricia Milligan and I'm a Senior Emergency Preparedness Specialist with the NRC. I'm also a certified health physicist.

Mr. SHAYS. Thank you for being here, and if you'd leave your card with the transcriber, that would be helpful. Thank you.

Ms. MILLIGAN. Would you restate your question, please, sir?

Mr. TIERNEY. If I can at this stage, though they should actually stand and be sworn in again.

The report was supposed to be given to Congress by December 12. My understanding is that the National Academy of Sciences hadn't even been requested to start the report by that date.

Ms. MILLIGAN. The National Academy was aware of the reports—was aware the bioterrorism legislation had been discussed. They had received the funding or the authorization for the funding within the past week or two. I'm not sure if the money has actually transferred hands yet at this point, but they plan to start the study at the end of May or early June. NRC has been contacted to be a part of the testimony to be presented to the National Academy.

Mr. TIERNEY. So they're going to start working on the report around the time that they were supposed to deliver to us the report; June, essentially.

Ms. MILLIGAN. As I understand it, that is what has happened.

Mr. TIERNEY. I'd just be curious to know who in the Bush administration was in charge of that miss? Whose responsibility was it? Is it Mr. Ridge?

Ms. MILLIGAN. I don't know who in the administration was responsible.

Mr. TIERNEY. My understanding was when Governor Ridge was first appointed by the White House, he was the one who was going—that was going to coordinate across all the various agencies all the things that were going on, to prevent things like this from happening. At least that's the impression we got. Now we got moved to a new Department. We're still waiting for his replacement at the White House. So does anybody know why the President hasn't appointed that replacement yet? Is there any problem within the Department?

I think it's important to get that report and to find out how it is we're going to distribute the KI beyond the 10-mile radius. There are people in my communities where those potassium pills were put out in drugstores and they were gone in a day. It's important to people that they have some comfort and security knowing that

they're going to have the ability to access that potassium, and I'd like to have tabs—if you could nail down a time plan on that as to when it's going to be started and when the anticipated date is going to be and share that with us, I'd really appreciate it.

Mr. MILLER. Congressman, we understand the question and we'll work to get you an answer.

Mr. TIERNEY. Thank you, Mr. Chairman.

Now, Mr. Miller, I understand that emergency exercises are sometimes conducted at nuclear power facilities; right?

Mr. MILLER. Yes. Yes, sir.

Mr. TIERNEY. And have you ever required the facilities to conduct those emergency exercises involving a terrorist attack?

Mr. MILLER. We have not required it. If what you're referring to are the emergency preparedness exercises—

Mr. TIERNEY. Exactly.

Mr. MILLER [continuing]. We have not required it. We performed one recently at a plant in California, but we have not required it.

Mr. TIERNEY. How might an emergency exercise in incorporated terrorism differ from the other exercises that you generally do?

Mr. MILLER. I'm not certain; every scenario is different; FEMA working with the help of NRC and others define scenarios. I'd say that we've not required terrorist-related emergency exercises. We have had over the years exercises that involve sabotage and the like. It involves sabotage of a pump or an electrical power supply and the like that contributes to a sequence of events which results in a release, a large release from the plant, and then the test is how well onsite decisionmakers and offsite decisionmakers deal with that sequence.

Mr. TIERNEY. I guess what I was thinking was it would be a little different if it was a terrorist attack, because the people might have to respond to all those things while they were still under fire or still under some sort of an attack; so you might be dealing with a release that was more exacerbated or happening faster in that instance.

Mr. MILLER. I think that brings us back to the earlier conversation about potential for offsite ramifications of a terrorist attack. That's a fair question.

Mr. TIERNEY. Do all of the plants that you know of, do they have an emergency plan in place that incorporates your local first responders, your SWAT teams, or whatever might be necessary to respond to that kind of an incident?

Mr. MILLER. I can't speak to that, but I can say that in our order on security, we required all companies to look at their emergency plans as they needed to be adjusted to have links established with offsite officials, the local law enforcement and the like. So in our order, we did look for all of our licensees to examine their—and upgrade their emergency plans to deal with that sort of issue. But your question is a broader one.

Mr. TIERNEY. Can I have Mr. Conklin just respond?

Mr. CONKLIN. As far as integrating the offsite first responders, all of these plans do that. We work closely with the medical communities, for example, the hospitals and the first responders around these facilities, the fire departments; and in a lot of cases there are memorandums of agreement or understanding between,

for example, the nearest fire station to help provide fire support on-site. So we do work closely to ensure that those things are integrated.

Mr. TIERNEY. Do you have the plans to—force-on-force sort of exercises incorporating all of that?

Mr. MILLER. In my remarks I talked about the force-on-force exercises that we are initiating. We've got a pilot program. Some four plants across the country will engage in this pilot program. The intent of this is to perfect the methods and then to conduct such exercises on an every 3-year basis at all plants across the country.

Mr. TIERNEY. Every 3 years?

Mr. MILLER. Every 3 years.

Mr. TIERNEY. Do you think that will be sufficient?

Mr. MILLER. These are very significant efforts. It's a large undertaking. They're very challenging, tough exams, and that's more frequent than what we had done prior to September 11.

Mr. TIERNEY. What is the turnover rate of security personnel within those plants, though?

Mr. MILLER. I can't speak to that. It varies from plant to plant, but I must say beyond those mock attacks, those force-on-force exercises, we will continue to do our inspections of security at the plants; so it isn't as if there will be no inspection during that period of time.

Mr. TIERNEY. Thank you. My time is apparently up. Thank you for your answers.

Mr. SHAYS. Mr. Janklow.

Mr. JANKLOW. Thank you very much, Mr. Chairman. Mr. Conklin, when Congresswoman Kelly asked you if you would include in your report somewhat of an analysis on the communication problem, could I ask you if you would expand on that, please? Let's just take four plants in the country. The one in San Onofre, Monticello in Minnesota, the Public Power district one in Nebraska and Indian Point, and if you would prepare for this committee—because I think it would be terribly enlightening for everybody to run an analysis of what are the communications that all of the various government entities utilize. I'm aware some are on high band and some are on low band; some are on UHF, some are on VHF; some are on AM, some are on FM. Some are on low band, some are 150, 450, 700, 800, 900.

My point is, I think we're going to find that sheriffs and police departments, city street departments, State highway departments, State highway patrols or State police, depending on what they're called, local ambulance services, or ambulance services and hospitals, the Bureau of Indian Affairs, the ATF, the FBI, we're going to find everybody's almost on a different system and different frequencies. I think, as you know, that in a true disaster we can have mobbing—we can have mobbing exercises with a plant, but you can't with the public. The public, when they get called upon, it's going to be their first time, and it may be for real and without the ability for everybody to be able to communicate together. All the planning in the world is going to be irrelevant. You are going to have mothers looking for their children. One's in a school and another one's in a day care center someplace, the parents at work. No one's going to follow some orderly evacuation process.

And I'm not saying this in a critical way, but communication becomes absolutely crucial to the success of a mission. And it would be very helpful, I think, to this committee and to decisionmakers, if you could prepare as part of the analysis response to Congresswoman Kelly, all four of those plans. It won't be difficult. It's not your fault or problem. We understand that. The FCC has all of these frequencies allocated, and busting it loose from them—it's easier to get something out of the Soviet Union sometimes than it is the FCC. So it's not a problem with you folks, but you could help enlighten all of us so that we could maybe get involved in the decisionmaking process between the legislative and executive branches. Would you do that, sir?

Mr. CONKLIN. Yes, sir. Could you just mention the third plant you mentioned?

Mr. JANKLOW. San Onofre in California, Monticello in Minnesota—I can't think of where the one's located in Nebraska—and Indian Point. The only reason I did that is those were four dispersed geographical areas, so I think it would highlight it.

Mr. SHAYS. If the gentleman would suspend, if you would just make sure the committee got that, and we will make sure it gets to Mr. Janklow and others.

Mr. JANKLOW. And then, Mr. Miller, maybe my questioning hasn't been fair to you. I asked you about terrorist incidences and you keep responding how the designs have been to earthquakes and hurricanes and things of that nature. And I think it's fair to say back when these plants were designed, no one ever anticipated that there would be suicide missions to fly into them, for example. People were far more concerned about a ground assault or stealth of some kind to get inside of them.

Is this part of the problem that you have, sir, that the chairman really was asking questions around that area—you know very well that terrorists know the vulnerabilities. If we have people that are prepared to die and we have people that have huge amounts of force, it's probably fair to say, isn't it, these plants may withstand it under certain circumstances, but this isn't what they were designed to deal with; is that correct?

Mr. MILLER. Well, they are the two parts. There's the part that involves the—

Mr. JANKLOW. Could you move closer to the mic, sir?

Mr. MILLER. Yes. There are two parts. There's the part that involves the attack on the plant, and I hope that the terrorists, if they are studying the situation, will see that if they were to attempt to attack a plant, they're dealing with a very menacing situation with a very heavily armed security force at those plants, with very significant external barriers, including detection systems and the like. The security was strong prior to September 11 and it's stronger now.

The other part has to do with cataclysmic or extreme events such as airplanes and the like, and as I've said, we have been doing studies. The results of those are not completed at this point, but it's in that regard that I talked about these plants being designed not specifically for a current-day, modern—a modern jetliner, but they are designed for these other phenomena. And that leads to an inherent very strong set of structures, and so the public shouldn't

have the view that these are facilities that are soft targets, easily impacted by—you know, by extreme events such as that.

Mr. JANKLOW. Understand. But I think we can all appreciate the difference between a hurricane or a tornado and a sizable aircraft flying into them as opposed to a Cessna 172 or a Piper Archer or something—

Mr. MILLER. The studies that have been done to this point have indicated that the existing planning basis, emergency planning basis, needs not to change at this point because it already requires the ability to deal with very large rapidly developing releases from a nuclear power plant. It's a testament really to the strength of the emergency planning basis that was in place prior to September 11 that we make that comment. It is not intended to downplay the potential for these attacks, and so it's in that respect that we make the comments we make.

Mr. JANKLOW. One last question. And I'd like to ask you both in your personal opinion, is the jurisdiction that the Nuclear Regulatory Commission has to deal with these types of situations and the jurisdiction that FEMA has to deal with them, recognizing the new Homeland Security—does each of your responsibilities lie in the correct area of the government? Is FEMA the right place to deal with it outside the facility and the NRC inside the facility? And I'm frankly more concerned with outside than inside. I think the safety within these facilities has been exhibited to show is very, very significant, other than a cataclysmic type of explosive attack, if I can put it that way, or impact attack; but in terms of FEMA's responsibility, which is awesome, to deal with perceived panic, concern, orderly evacuation, caring for people, is FEMA the right agency, Mr. Conklin, to have this, in your personal opinion?

Mr. CONKLIN. Yes.

Mr. JANKLOW. Thank you.

Mr. SHAYS. Mrs. Kelly.

Mrs. KELLY. Thank you, Mr. Chairman. Mr. Miller, I'm going to ask you two questions and I want a yes or a no answer on the two questions, and then I have a followup. Were there any out-of-sequence activities or crediting used during the last exercise at Indian Point?

Mr. MILLER. I believe there were.

Mrs. KELLY. Do you know if it was crediting or out of sequence?

Mr. MILLER. I'm not sure I understand the distinction. And if you're referring to offsite, I would respectfully ask that FEMA answer that question. Perhaps Mr. Conklin may not know the details, but—

Mrs. KELLY. Mr. Conklin.

Mr. CONKLIN. There were out-of-sequence exercises conducted as part of the review and evaluation of the Indian Point plans and procedures.

Mrs. KELLY. Will you give me a yes/no answer to this question? Were the reception center activities done in real time or out of sequence?

Mr. CONKLIN. I believe they were done out of sequence.

Mrs. KELLY. I have in my hand an internal memo. It's an older memo from FEMA. This states, "The root causes identified in the Indian Point II accident for failure and emergency preparedness

were unrealistic drills and artificialities in the practice of new or existing procedures. The result was that in this real incident, the State and locals could not respond to the continuous flow of information nor could they integrate their response as needed. This could affect our assumptions about out-of-sequence demonstrations and the impact of granting credits and exempting exercise demonstration and evaluations."

I'm reading this into the record because this memo came from FEMA. I think it's very important that we focus on what exactly is being done to face this realistically instead of putting in—taking in credits or doing something out of sequence. When was the last time that an unannounced exercise took place at Indian Point, Mr. Conklin?

Mr. CONKLIN. I don't know.

Mrs. KELLY. Mr. Miller.

Mr. MILLER. There have been a number of unannounced—

Mrs. KELLY. No. I just want when the last time was.

Mr. MILLER. I don't know. On site there have been a number of those, but offsite I'm not aware.

Mrs. KELLY. When was the last onsite unannounced?

Mr. MILLER. I can't recall. There are various drills that are done to, in fact, among other things, assure that people can respond within required times. Those are done periodically.

Mrs. KELLY. Within the framework of those people that have already been sworn in, is there anyone sitting in the audience that can answer that question? So you don't know if there was ever—is that a safe assumption—you don't know if there was ever an unannounced exercise?

Mr. MILLER. Are you referring to an exercise that involves all of the offsite responders, local officials and the like?

Mrs. KELLY. Well, you gave me a choice. So let's take both.

Mr. MILLER. Yeah—

Mrs. KELLY. Internal and external.

Mr. MILLER. Off-site emergency exercises, because they require numerous people who have other jobs beyond just emergency preparedness, are planned well in advance of the time that those are conducted. What I was referring to was onsite. There are periodic drills in power plants to look at the ability for people to respond in short time. Individual drills. I just can't give you the exact times that those were done. I know that they have been done over the past several years at Indian Point.

Mrs. KELLY. Can you get back to me on the answers to these questions?

[The information referred to follows:]

**House Committee on Government Reform  
March 10, 2003 Hearing  
*Emerging Threats: Assessing Public Safety and Security Measures at Nuclear Power Facilities***

**Questions for the Record**

**Representative William Janklow**

Statement 1: "It appears letters of agreement have been submitted, but they haven't been finalized."

Statement 2: "It appears that, as to evacuation, the plans don't yet incorporate data from the updated evacuation time estimate studies that reflect the new demographics as well as the shadow evacuation."

Statement 3: "It appears that the joint news conference procedures really don't work very well, but they are working on upgrading them."

Statement 4: "It appears that the procedures for schools in the county are adequate, but that the individual school districts, preschools and day care centers have not yet submitted these plans for FEMA review for consistency and completeness."

Statement 5: "If they say it is a resource problem because of the number of nuclear plants, how do we fix the problem? What do we do to fix the problem?"

Statement 6: "Congresswoman Kelly asked you if you would include in your report some type of an analysis on the communication problem, could I ask you if you would expand on that, please? Let's just take four plants in the country. The one in San Onofre, Monticello in Minnesota, the Public Power District One in Nebraska and Indian Point, and if you would prepare for this committee—because I think it would be terribly enlightening for everybody to run an analysis of what are the communications that all of the various government entities utilize."

**Representative Sue W. Kelly**

Statement 1 and 2: "What have you done specifically to address the additional comments that the Witt report spoke about with the impact of a terrorist attack could have on your emergency plans? Have you done anything about the comment in the Witt report that speaks of the fact that high-population areas require different—have a different requirements on an evacuation plan than otherwise?"

Statement 3: "Have you done anything to address that problem, the problems of communication between each other (communications that occur between the plant, the local officials and the county—the surrounding county officials) these different areas? Is FEMA addressing the problems that we are having with allowing these first responders to any emergency to be able to talk with each other?

Statement 4: "Were there any out-of-sequence activities or crediting used during the last exercise at Indian Point? Were the reception center activities done in real time or out of sequence?"

Statement 5: "When was the last time that unannounced exercise took place at Indian Point?"

Statement 6: "Is it correct that FEMA is going to soon be taking public opinion on the proposed changes to the REP program?"

**Report for the Record****Committee on Government Reform  
U.S. House of Representatives  
June 6, 2003**

On March 10, 2003, the House Committee on Government Reform held a hearing on "Emerging Threats: Assessing Public Safety and Security Measures at Nuclear Power Facilities." Representatives William Janklow and Sue W. Kelly requested that FEMA respond to several statements and or questions regarding Indian Point. The following are FEMA's responses to Representatives Janklow and Kelly.

**Representative William Janklow, South Dakota**

***Statement 1: "It appears letters of agreement have been submitted, but they haven't been finalized."***

**Response 1:** Putnam County submitted updated Letters of Agreement (LOA) to FEMA. Orange and Rockland Counties agreed to FEMA staff visits and, at the Orange County staff assistance visit, the LOAs were provided for review and verification and found to be adequate. At the Rockland County staff assistance visits in May, it was reported that the LOAs were in the process of being updated and were nearly complete. Rockland County has subsequently submitted the 2003 updated plans and procedures, including information on LOAs, to New York State. Westchester County has indicated that it will not make available any information required for FEMA's review, including LOAs.

***Statement 2: "It appears that, as to evacuation, the plans don't yet incorporate data from the updated evacuation time estimate studies that reflect the new demographics as well as the shadow evacuation."***

**Response 2:** On March 20, 2003, the licensee, with a renowned expert on the subject, T.E. Urbanik, conducted a general briefing on Evacuation Time Estimate (ETE) Studies at the Thayer Hotel in Highland Falls, New York solely to explain the methodology for developing ETEs. FEMA, NRC, State and affected county representatives attended this meeting. The Entergy contractor, KLD Associates, also considered to be a top firm in the development of ETE Studies, was hired to complete the ETEs. The KLD Associates Team met independently with the four counties and provided the draft and final ETE studies to them, both orally and in hard copy. As a follow-on to the project, KLD Associates is performing additional studies for the counties, at their request. Work is ongoing with the Counties' law enforcement personnel on updating the Traffic Management portions of the plans, based on the new ETEs. Rockland, Orange and Putnam Counties have all incorporated the updated information on population and time estimates into their plans and procedures. FEMA has not yet fully verified these changes but has begun a review of the Orange and Putnam County plans, and the Rockland County plan will be reviewed when it is received. Again, Westchester County, as indicated above, has not provided any information or any indication as to whether they will incorporate this information.

*Statement 3: "It appears that the joint news conference procedures really don't work very well, but they are working on upgrading them."*

**Response 3:** FEMA is working with the staffs of the licensee, State, and affected counties to improve on the Joint News Center (JNC) procedures. On January 29, 2003, FEMA observed a tabletop JNC exercise to demonstrate the new process and procedures. FEMA provided recommendations to the State and affected counties as a result of this exercise. Although further work is still required, FEMA, State and county officials generally agree that JNC procedures are being adequately addressed.

*Statement 4: "It appears that the procedures for schools in the county are adequate, but that the individual school districts, preschools and day care centers have not yet submitted these plans for FEMA review for consistency and completeness."*

**Response 4:** Not all REP offsite response plans and procedures for the individual preschools and daycare centers have been provided to the FEMA Regional office for review. FEMA has offered technical assistance to the affected counties to assist preschools and daycare centers that lack REP plans and procedures. This is a significant issue in Westchester County, which has the largest school population, since it is unwilling to provide information to FEMA. The issue is compounded because the State, citing "Home Rule," will not intervene in this process at the county level.

*Statement 5: "If they say it is a resource problem because of the number of nuclear plants, how do we fix the problem? What do we do to fix the problem? Or do we ask the terrorist to wait until we can get more resources?"*

**Response 5:** FEMA recently approved \$3.5 million for Hazard Mitigation Grant Program projects for the State of New York, specifically for Indian Point. The projects range from education of the general public in the four affected counties to the development of a Geographical Information System that local officials can use to assess their plans. The Federal funding for these projects is limited by regulation to 75 percent of the project costs. Regarding funding to support local involvement in the REP process, the utility provides funding at various levels across the country. Presently, there are no regulatory controls on the level of funding support, and these amounts are determined in negotiations with the State, counties and utility. In the case of Indian Point, Entergy offered more than an additional million dollars above what it already provided to support the efforts of county governments. Entergy also offered contractual assistance for the development of updated Joint News Center procedures.

A major obstacle in New York State is the State's position that as a "Home Rule" state, it is limited to providing assistance only after a State or federal emergency is declared and that it has no authority to assure that local emergency preparedness planning is adequate. The State's view of its "Home Rule" authorities thus limits its involvement only to supporting FEMA in working with the counties for better and compliant plans.

*Statement 6: "Congresswoman Kelly asked you if you would include in your report some type of an analysis on the communication problem, could I ask you if you would expand on that, please? Let's just take four plants in the country. The one in San Onofre, Monticello in Minnesota, the Public Power District One in Nebraska and Indian Point, and if you would prepare for this committee—because I think it would be terribly enlightening for everybody to run an analysis of what are the communications that all of the various government entities utilize."*

**Response 6:** FEMA completed the communications systems inventories, which were provided by the State and local affected counties of California, Nebraska, Minnesota and New York. The attached report reflects the data requested.

**Representative Sue W. Kelly, New York**

*Statement 1 and 2: "What have you done specifically to address the additional comments that the Witt report spoke about with the impact of a terrorist attack could have on your emergency plans? Have you done anything about the comment in the Witt report that speaks of the fact that high-population areas require different—have different requirements on an evacuation plan than otherwise?"*

**Response 1 and 2:** The Radiological Emergency Response Plans, which are prepared by the State and the risk and host counties, take the worst-case scenarios into consideration. FEMA is working with the NRC to conduct future exercises, for Indian Point and other facilities around the nation, that include a terrorist act or acts as the initiating event of a scenario. This will provide for a more complete understanding of this type of scenario. High population areas are reflected in the ETEs developed for each county. In the case of Indian Point, additional consideration of "shadow evacuation" was included directly in the computations to ensure that the impact of additional population would be considered. Planners are provided this information, along with specific recommendations for traffic control, to address potential problems that could result from a high volume evacuation.

*Statement 3: "Have you done anything to address that problem, the problems of communication between each other [communications that occur between the plant, the local officials and the county—the surrounding county officials] in these different areas? Is FEMA addressing the problems that we are having with allowing these first responders to any emergency to be able to talk with each other?"*

**Response 3:** FEMA recognizes the issue and will be working with the Department of Justice to review how the interoperability issues can be resolved. Funding has been made available in the FY 2003 Budget with DHS to initiate this effort and begin implementation. Under our Hazard Mitigation Grant Program, FEMA has also approved funding for the State for Indian Point for several communication and information systems. These include a Geographic Information System to allow for rapid identification, hand-held radios to augment present communications and a satellite teleconferencing system.

*Statement 4: "Were there any out-of-sequence activities or crediting used during the last exercise at Indian Point? Were the reception center activities done in real time or out of sequence?"*

**Response 4:** Several out-of-sequence exercise activities were demonstrated and evaluated as part of the 2002 exercise for Indian Point. At the request of the State and counties, out-of-sequence activities were demonstrations of facilities and procedures in addition to those that were demonstrated and evaluated at the time of the full-scale exercise. Out-of-sequence activities included school interviews, special population and bus company interviews, congregate care and reception centers, traffic control points, emergency worker personnel monitoring centers, and a medical services drill.

*Statement 5: "When was the last time that [an] unannounced exercise took place at Indian Point?"*

**Response 5:** On October 26, 1999, an unannounced, off hours drill for the affected counties at Indian Point was demonstrated.

*Statement 6: "Is it correct that FEMA is going to soon be taking public opinion on the proposed changes to the REP program?"*

**Response 6:** On February 27, 2003, FEMA published a Federal Register notice to extend the comment period for the extant planning guidance used by State and local governments for developing radiological emergency response plans in support of the licensing of commercial nuclear power plants. FEMA also uses the guidance to evaluate state and local plans. The public comment period for the operative planning guidance ended April 29, 2003. The State of New York and the four counties were notified of this opportunity to comment. The comments on the planning guidance are being considered and the guidance will be revised accordingly. In addition, in the next few weeks, FEMA will submit a Federal Register Notice for public comments on the exercise evaluation criteria and results-based methodology that was published in 2001. Once comments are received on the exercise evaluation criteria and methodology, they will be considered and the criteria will be modified as appropriate. The basic premise and Planning Standards of the program will remain; the referenced guidance provides information on how to apply the Planning Standards to emergency response plans and exercises.

Mrs. KELLY. I have another question. And that is, Mr. Conklin, is it correct that FEMA is going to soon be taking public opinion on the proposed changes to the REP program? You can just answer yes or no.

Mr. CONKLIN. We don't have it in our plans at this moment.

Mrs. KELLY. So the answer is no, you're not going to take public comment?

Mr. CONKLIN. No. Not through a formal process, no. We have not set that up.

Mrs. KELLY. Thank you very much, Mr. Chairman. Yield back.

Mr. SHAYS. Thank you. We will get to the next panel very shortly here.

As I've listened to the response, I'm kind of wrestling with why we're not making much progress, at least as far as I can see, and I don't really understand much more than when I started this hearing. I know that 50 percent of the electric generation is coal and 20 percent is nuclear, and I know it's huge, and I know that we have to be concerned about global warming and I know we need energy and I know we've got to be careful that we don't foolishly shut down plants and cause a crisis in energy. I know all of those things.

But what I find eerie is that I would get a letter from the chairman of the NRC that basically doesn't feel that there is any significance to a terrorist attack other than any other kind of crisis at a nuclear generating plant. And I am concerned with the concept in this letter that the Witt report had undue weight to the impact to potential acts of terrorism. And then I'm trying to reconcile, Mr. Miller, your comment to when Mr. Tierney said, "I would assume that during an accident release, everyone at the facility would be working together to stop a potential release in a terrorist incident; however, wouldn't you assume a faster radiological release, since the operators may be trying to apply compensatory measures under gunfire and explosions?" And you say yes. So in that sense, you see it, and yet you don't relate it to the bigger picture. And I just find this kind of like there's no connection.

I would be much more comfortable if you just said, obviously there are going to be differences and we're working on it. That would make me feel a lot better. It doesn't make me feel good that we have never, ever found a need to look at an evacuation plan and say maybe the plant needs to be shut down.

And, Mr. Conklin, I want to ask you, does FEMA agree with the NRC that the Witt report gives undue weight to potential terrorist attacks? Do you believe the Witt report gives undue weight to the potential terrorist attacks?

Mr. CONKLIN. We believe that all potential accident scenarios need to be considered and looked at when developing emergency response plans around these facilities or other facilities, whether they're chemical, nuclear, or anything else in which a release of hazardous materials or radioactive materials can cause an offsite impact.

Mr. SHAYS. You answered a question I didn't ask, but now answer the question I asked.

Mr. CONKLIN. I believe to ignore is to ignore the elephant in the room; that it's a big issue there, and we need to address it and take

a look at it from the standpoint of the guidance that we currently have in place and how we conduct our exercise. I don't believe it gives undue weight. No, I don't.

Mr. SHAYS. Mr. Conklin.

Mr. MILLER. Mr. Chairman, may I try——

Mr. SHAYS. No, not yet. Not yet. You got it to the end and the question is you do not believe what?

Mr. CONKLIN. I do not believe it gives undue weight. I believe it's an issue that needs to be looked at and needs to be looked at seriously, and I believe with the new formation of the Department of Homeland Security and FEMA's incorporation into the Emergency Preparedness and Response Directorate, positions us well to take advantage of a lot of activities across the government that can help us look at this issue in a much broader, more detailed view.

Mr. SHAYS. Mr. Miller.

Mr. MILLER. Mr. Chairman, context is everything here. And that comment that we made was made recognizing that, as Mr. Witt himself or the Witt group acknowledged, it wasn't within their charter to look at security in detail. They didn't have the time to look at security in detail. The report recognized that. The Commission issued that letter to make clear that many steps were taken, that the Witt report and the Witt committee—the Witt study was not able to examine. So it was in that context we said we thought it appeared as if undue weight may have been given, that not enough was recognized regarding the kinds of steps that I had talked about earlier.

So it was not in any way downplaying terrorism and the potential impacts that it could have. And as far as differences are concerned, certainly a scenario involving terrorism would be different than, you know, sequences that might involve a pump or a power supply and the like. But what we have always required is that the emergency plan be able to deal with a whole spectrum of things, things we can't even think about today. And it's in that respect, it's in the result, it's in the outcome, that we have talked about how the current emergency plans, we feel, address and encompass the kinds of things that can occur as a result of a terrorist attack. We're talking about the potential for releases from the plant. We have always required that large, fast developing releases be addressed through emergency planning.

Mr. SHAYS. I feel like you're giving me old theology, and I feel that it is not pertinent to what we are dealing with now, and so we're going to have just a difference of opinion. You obviously are telling me what you believe, and it scares the heck out of me that you believe that. It gives me no confidence. And I didn't intend to come to the hearing—and I thought this panel would be quick in and quick out, and I thought we'd spend a lot more time on the third panel. So it's just probably been one of the most unsatisfying panels in my 4 years that I've ever listened to, because I feel like we aren't being honest with the American people. That's the way I feel.

Mr. MILLER. Well, we continue to look at vulnerabilities. I've said that. We have not stopped looking at the potential vulnerabilities associated with terrorism, and hopefully you don't take away from this that we have stopped, and all the actions that we think, you

know, will ever need to be taken have been taken. We're continuing to examine that. So in that sense we've not closed out our consideration of what the potential effects of terrorism would be.

Mr. SHAYS. I'm just going to read this paragraph—I got it from the chairman—and then we're going to go to the next panel: "while we appreciate and recognize the effort that went into the draft report, we believe the draft report appears to give undue weight to the impact of potential acts of terrorism on emergency planning and preparedness." And continuing, and in context with the rest of what's said, "Emergency preparedness programs are designed to cope with a spectrum of accidents including those involving rapid large release of radioactivity. Emergency preparedness exercises invariably included large releases of radioactivity that occurs" slightly—"shortly after the initiation of events. Necessary protective actions and offsite response are not predicated on the cause of events. Whether releases from the plant occur as a result of terrorist acts or equipment malfunctions, emergency plans guide decisionmakers and responders in the same way. Preliminary results from our vulnerability studies do not indicate an increased source term or quicker release from terrorist-initiated events than is already addressed by the emergency planning basis required by the NRC regulations and in place at Indian Point."

I believe that's old theology. That's what I believe. It is my practice to allow the last word on the part of the panelists, so you have the last word, and then we'll get to the next panel.

Mr. Conklin is there anything you wanted us to ask that you were prepared to say that you need to put on the record?

Mr. CONKLIN. I would just like to say that the REP program is committed to supporting the efforts of State and local governments to improve the planning and exercise process, and thank you for the opportunity to be here before you today. And what we will do is continue to work with the folks on Indian Point and all the other nuclear sites to improve their programs and plans.

Mr. SHAYS. Mr. Miller.

Mr. MILLER. Mr. Chairman, NRC has taken strong steps to assure that security is appropriate for this post-September 11 environment, and we continue to examine the threat environment, working closely with the Department of Homeland Security and other appropriate Federal agencies. And we will also continue to work with stakeholders at all plants and, in particular, the Indian Point plant, as the State, FEMA, and others work to address the issues that have come up in that case. Thank you, Mr. Chairman.

Mr. SHAYS. Thank you very much, gentlemrn.

Our second panel is the honorable Richard Blumenthal, attorney general, State of Connecticut; Mr. John Wiltse, director, Office of Emergency Management, State of Connecticut; and the honorable Richard Bond, first selectman, Town of New Canaan, which is also in the State of Connecticut.

A little bias toward Connecticut on this panel here.

Gentlemen, if you could just remain standing, I will swear you in before you sit down. Thank you.

[Witnesses sworn.]

Mr. SHAYS. Thank you very much. Please be seated.

Just change those names around; we have you in reverse here, but we'll just switch those around. Would you change the names? That goes over one.

Gentlemen, sorry to keep you waiting. Your testimony will be part of the record. You can read from your testimony. You can summarize it and make comments to comments you've already heard. You have the time and it's yours.

And I think we are going to start out with you, Mr. Blumenthal. Is that correct? And then we will go to Mr. Wiltse and then we will end up with the first selectman of New Canaan.

**STATEMENTS OF RICHARD BLUMENTHAL, ATTORNEY GENERAL, STATE OF CONNECTICUT; JOHN T. WILTSE, DIRECTOR, OFFICE OF EMERGENCY MANAGEMENT, STATE OF CONNECTICUT; AND RICHARD BOND, FIRST SELECTMAN, TOWN OF NEW CANAAN**

Mr. BLUMENTHAL. Thank you very much, Mr. Chairman. And may I thank you and Congressman Kucinich for your leadership in having this hearing. And to Congresswoman Kelly for her leadership as well; you and other Congressmen in the New York area, such as Congresswoman Lowey and Congressman Engel, all have been involved. And this issue really has been one that has united Connecticut and New York in a common cause simply to protect our citizens.

And I want to particularly thank you for having this hearing because one of the illuminating aspects of what we just heard is that these agencies do not plan to have any formal public comment. And so really, you in Congress are filling that vacuum and it is a vital task that you are performing by giving citizens and their representatives an opportunity to comment and trying to make this process more transparent, enable people to be more informed so that the level of fear can be diminished somewhat and it is in many respects that fear that we have to fear more than anything else. And so I really want to thank you genuinely for the enormous educational function that you are performing.

Mr. SHAYS. Would the gentleman just suspend a second? I want to point out that Mr. Tierney has really been very—leading a very strong effort in this area and has kind of taken over for Mr. Kucinich.

Mr. TIERNEY. He's just afraid I'll ruin Kucinich's reputation, so he wants to make it clear.

Mr. BLUMENTHAL. I express my thanks to Congressman Tierney, as well, first, may I say that I submit my testimony for the record and I will just very briefly restate it, but also react to some of what we have heard so far.

When you commented, Mr. Chairman, that we were hearing the old theology, I would go even further back. I think we are in the Stone Age of planning for security against terrorist attack on our nuclear facilities; and in a sense, Indian Point is just a poster child for the lack of planning and safeguarding of these facilities across the country.

These facilities really are dirty bombs waiting to be detonated. They are vulnerable to attack and they are improperly and inadequately safeguarded from that kind of attack, which we cannot an-

ticipate in detail. But we do know, Mr. Chairman, as you stated so well, that the terrorists know more than the people, and part of what we need to do is make this system more transparent.

The Witt report says, and we all know, that the current planning is inadequate in part because—largely because it fails to address the possibility of nuclear—the terrorist attack on these nuclear facilities. And, in fact, it says, and I am quoting, the plans do not consider the possible additional ramifications of a terrorist-caused release.

FEMA has accepted the fact that the current plans inadequate, but it has ducked its responsibility by kicking back the issue to officials in New York. In my view, the plant should be shut down until we have adequate planning, including safeguarding against terrorist attack.

And it's more than my opinion that counts. I believe that is also the law. The law indeed requires that there be an adequate plan.

Connecticut has petitioned FEMA. We will side with environmental groups that have petitioned the NRC. We will go to court if necessary. But I believe that this Congress has a unique obligation, as well as an opportunity, to send a profoundly important message to the industry and the Federal regulators that it will not tolerate this kind of buck-passing.

Congressman Janklow asked the question, who is at fault, whose fault is it that we have inadequate planning? And the simple answer is, we don't know. No one can say, given the current state of the law and given the current buck-passing that has happened and is ongoing.

There are obviously needs for legal accountability and, more important, public policy accountability here that is simply not happening. And in my view, the regulatory agencies have dismissed and disregarded the very real threat of terrorist attack in the public pronouncements that you have cited, Mr. Chairman, and that people simply will not accept.

What we need to do is, on Indian Point, shut it down until there is adequate planning. There may be objections that the power has to be made available from other sources. There are other sources, they are affordable, and they are achievable and must be achieved, because the safety and security of citizens who live in that area are at stake.

Let me just close very briefly by saying that the Witt report finds that this plan is inadequate not only because it fails to guard against or plan for terrorist attack, but any sort of release would trigger an emergency that there simply have not been plans for.

In terms of evacuation, Connecticut's roads would be involved. One-third of our population, including many of our major cities like Bridgeport and Norwalk, Stamford, Waterbury, Danbury, all would be at risk within the 50-mile area. Our food and water supplies would be jeopardized. And the plan really is inadequate because it fails to consider common sense, as well as science—that parents, for example, will not evacuate separately from their children. You don't need to do another study to know the answer to that question.

And so I think that I just want to thank this committee for its contribution, thank the members of this panel who have helped to

lead it and say that as State officials, we need Federal help. We need their resources. We need the science that Federal officials can make available to us. We need it now. And we also need, again, accountability.

This committee has asked the right question. Who's fault is it? And someone has to answer, it's mine, it's ours; and right now, that isn't happening. Thank you.

Mr. SHAYS. Thank you very much, Mr. Blumenthal.

[The prepared statement of Mr. Blumenthal follows:]

*TESTIMONY OF  
ATTORNEY GENERAL RICHARD BLUMENTHAL  
BEFORE THE COMMITTEE ON GOVERNMENT REFORM  
SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS  
AND INTERNATIONAL RELATIONS  
MARCH 10, 2003*

I appreciate the opportunity to speak on a very critical issue: the safety and security of the people who live and work near the Indian Point nuclear power plants. I thank Subcommittee chair, Congressman Christopher Shays, for his strong interest in this critical issue.

I have submitted a formal petition to the Federal Emergency Management Agency (FEMA) urging that the agency withdraw its approval of the flawed and inadequate Indian Point Radiological Emergency Preparedness Plan (REPP). I have also called for the shutdown of the Indian Point nuclear power plant until an adequate emergency preparedness plan is completed.

If FEMA does not act quickly and appropriately, I am considering specific legal action compelling the agency to comply with its own regulations and federal law, and to file a petition forcing the Nuclear Regulatory Commission (NRC) to suspend the Indian Point NRC license pending full review of the emergency preparedness plan.

Congress also can and should act. It should take legislative action to explicitly and clearly require a radiological emergency preparedness plan that will adequately protect public health and safety in the area surrounding Indian Point. It should also review and revise laws to prevent FEMA from approving a preparedness plan that fails to assess vulnerability to terrorist attacks, the need for public notification and exposure to contaminated food and water supplies. Finally, Congress should require FEMA and the NRC, upon a denial of certification by a state or local government of the emergency preparedness plan, to hold a hearing and formal review of the emergency preparedness plan. FEMA and the NRC would have the burden of proving that the plan meets all statutory and regulatory requirements. During the pendency of the hearing, either the plant should suspend operations or the federal government should assume responsibility for the security and emergency procedures of the nuclear power plant until an emergency preparedness plan is approved.

The Indian Point emergency response plan – more correctly, non-plan – is rightly a cause of alarm and outrage in New York. It is also a very immediate and urgent concern to many Connecticut residents.

The State of Connecticut has a compelling interest in the Indian Point emergency preparedness plan. Approximately one third of our population, our food and water supplies, and our major roads -- all are within the 50 mile radius of real and present danger. This area includes many of our largest cities and three of our most populous counties. In the event of a radiological release, our medical, transportation and other emergency services of Connecticut would be heavily involved.

Federal statutory law and FEMA regulations and guidances require that every nuclear power plant develop a plan that would specify evacuation plans and other steps to prepare for a release of radioactive materials. These plans must be approved by the state and FEMA as adequately protecting public health and safety. FEMA's past approval of the plainly inadequate Indian Point plan violates its own regulations and policy documents in seven specific areas:

**1. THE INDIAN POINT REPP DOES NOT ADEQUATELY ADDRESS THE POSSIBILITY OF A TERRORIST ATTACK.**

The essential premise of the REPP is that any radiological release from the facility would come from an accident in the reactor containment building. This assumption fatally compromises the REPP because it does not consider the impact of a deliberate (terrorist-caused) release that would have significantly different characteristics and effects. In his State of the Union Address, President Bush noted "we have found diagrams of American nuclear power plants and water facilities, [and] detailed instructions for making chemical weapons." President George W. Bush, State of the Union Address (January 29, 2002). The REPP never considers the possibility that emergency personnel might be busy elsewhere, or under attack themselves, or that the evacuation routes may be partially or completely destroyed. In a post-September 11<sup>th</sup> world, an 'emergency' plan that ignores these contingencies amounts to willful blindness.

**2. THE EVACUATION TRAVEL TIME ESTIMATES FOR THE INDIAN POINT REPP FAIL TO MEET THE REQUIREMENTS OF THE NUCLEAR REGULATORY COMMISSION AND FEMA REGULATIONS.**

The Nuclear Regulatory Commission and FEMA regulations require that both the licensee and the State and local governments meet specific requirements for the travel time estimates. However, as noted in the James A. Witt Associates Report (Witt Report), the REPP has several material weaknesses in this regard.

The REPP appears to be "based on the premise that people will comply with official government directions rather than acting in ... their best interest." (Report, p. vi) Further, the plans do not consider the effects of a terrorist attack, which could include simultaneous attacks on transportation infrastructure or other targets within the 10-mile or 50-mile radii. Unlike an accident, the purpose of a terrorist attack is to cause disruption and increase casualties. Therefore, preparation for a terrorist attack requires much different contingency plans than preparation for an accident. Finally, no mention is made in the REPP of the current transportation capabilities of Interstates 95 and 84. Both of these major roads have suffered

significant increases in average daily vehicle trips (ADVTs). “Congestion is endemic throughout the Coastal Corridor [area]. It is acute on the primary highways, Interstate Routes I-95 and 84, and U.S. Route 1 and CT Route 15, and particularly acute on the westerly portion of Interstate Route 95.” *Coastal Corridor Transportation Investment Area Twenty Year Strategic Plan For Transportation Investment Area*, Nov. 7, 2001, p. 6. Many of the Coastal Corridor [area] roadways were built neither to handle the volume of traffic that currently exists nor to accommodate the type of travel common today.” *Id.*

### **3. THE INDIAN POINT REPP FAILS TO ADDRESS VOLUNTARY EVACUATION AS REQUIRED BY NRC GUIDANCE DOCUMENTS**

The Nuclear Regulatory Commission guidance for a REPP requires the consideration that during an evacuation, there will be other people who decide to evacuate even though they are not under order to do so. Evacuation by people who are not under an order to do so is called “shadow evacuation”.

The REPP does not address “shadow evacuation.” See Witt Report p. vi. “Shadow evacuation” is not mentioned, and from the descriptions of the computer model used, it is clear that “shadow evacuation” was not factored into the model. Accordingly, all calculations of evacuation times, road capacities, and other logistical concerns assume no additional usage or loads by those outside the zone who may decide to evacuate without either instruction or permission from authorities to do so.

### **4. THE REPP FAILS TO ADDRESS FAMILY SEPARATION IN ITS ANALYSIS OF EVACUATION TIMES.**

In preparing the REPP, federal regulations require a logical, thorough and complete analysis of the information known about population is necessary for the REPP to meet the legal requirement to “adequately protect the public health and safety.” The Indian Point REPP assume two illogical behavior patterns that renders its evacuation times utterly useless

The REPP assumes that family members, particularly parents and school children, will be willingly separated in the event of evacuation. This presumption is contrary to everyday common sense and has a serious impact on evacuation timetables. The REPP blithely assumes that school children and their families would evacuate separately, and at the same time presumes that families would leave as one unit and utilize only one family car. In evacuation scenarios that take place during school days, these two situations contradict each other. When people decide to get their children before evacuating, this will obviously throw off the planned evacuation timetable. The REPP time estimates analysis also fails to address the situation where parents may have children in multiple schools, which may have different designated reception centers for each child.

There is a larger behavioral problem, however. The evacuation plan calls for separation of school children from their parents in the event of a radiological release that requires

evacuation. This will not happen. It defies explanation that plan believes parents will calmly leave their children in school or infants with daycare providers and climb into their private cars and drive to a designated disaster relocation area. What will happen is that people will seek to reunite *prior* to evacuation despite anything that governmental authorities try to do to stop this.

**5. THE INDIAN POINT REPP FAILS TO ADEQUATELY INFORM THE PUBLIC IN THE EVENT OF RADIOLOGICAL EMERGENCY AND RELIES UPON SELECTIVE RELEASE OF CRITICAL INFORMATION AND SECRECY.**

Federal law requires notification to the public of a radiological release, particularly when protective action is required. In addition, the plan needs to address means of maintaining order and control during the evacuation. However, the Indian Point REPP fails to accomplish these two tasks for the reason that it anticipates two separate forms of notice of evacuation: first, a non-public notification of public school administrators, followed by a second, later notice of evacuation. This first ‘secret notice’ is to evacuate children first and avoid the mass confusion of large numbers of parents rushing to the schools before leaving themselves.

As a matter of easily predictable fact, this “secret notice” approach will lead to confusion, panic and chaos. Most nuclear power plants were built, or at least designed, in the 1960s and 1970s. At that time, sirens, radio, television and landline telephones were the only effective means of public communications. As was evident on September 11<sup>th</sup> 2001, cell phones and other technologies that disseminated unofficial warnings created “information soup” regarding emergency efforts. If there is an emergency at Indian Point, individuals receiving advanced notice will immediately call spouses or friends to tell them to leave. Once word is out unofficially, it will spread virtually instantaneously. Attempts to control evacuation information through secrecy will fail, and will undermine confidence in the overall evacuation plan and cause huge problems with the timely evacuation of the area.

**6. THE INDIAN POINT REPP FAILS TO MEET THE REQUIREMENTS FOR PROTECTION OF FOODSTUFFS AND DRINKING WATER IN THE 50 MILE INGESTION EXPOSURE PATHWAY EPZ.**

The FEMA regulations require the state to assume the primary role in addressing radiological contamination of foodstuffs or the water supply, and to specify to the local governments how it plans to do so. There has been no such effort in the Indian Point REPP, which does not indicate which New York agencies are to be contacted or how these contamination assessment process will work. The Indian Point REPP does not even contain the maps locating crops, farms or water treatment centers, and indicates that they will not be made available. The Indian Point REPP is short on specific details essential to a plan protecting the water supply of numerous Connecticut residents and makes no provision regarding potential water and food contamination in Connecticut, an unacceptable situation.

**7. THE INDIAN POINT REPP FAILS TO ADDRESS THE REQUIREMENT  
FOR ADMINISTERING RADIOPROTECTIVE DRUGS TO THE  
GENERAL POPULATION.**

The Protective Response Planning Standards require the State and Local governments develop a plan to administer radioprotective drugs, such as potassium iodide ("KI"), to the general public. Some experts believe that radioprotective drugs, such as potassium iodide ("KI"), may have a protective effect if taken properly for radioiodines. Yet, the Westchester County REPP makes no provision for administering these drugs to the general public. Nor does the Rockland County REPP, stating that "KI will be available for emergency workers and captive populations" such as hospital and nursing home patients and staff and incarcerated populations. Neither the regulations nor the plan provide at all for the possibility that KI will be needed in Connecticut, beyond the 10 mile EPZ. Obviously, the need for KI use in Connecticut must be carefully evaluated and provision made for KI distribution if it is appropriate.

In conclusion, FEMA must comply with its legal obligations under 44 CFR § 350.13(a) and withdraw approval for the Indian Point REPP. I have formally requested that FEMA withdraw its approval because of the above-cited weaknesses and shortcoming of the emergency preparedness plan. I am prepared to take further legal action, if necessary, and work in conjunction with New York and Connecticut officials to ensure that there is a proper emergency response plan in place for Indian Point that adequately protects the safety and health of the citizens in this bi-state area. I urge Congress to take action to ensure a fair, secure process for review of emergency preparedness plans.

Mr. SHAYS. Mr. Wiltse.

Mr. WILTSE. Mr. Chairman, distinguished subcommittee members, it is a privilege to appear before you today.

The central question for emergency managers is not whether nuclear plants should or should not be shut down. The central question is, how can we advance existing readiness?

One of the basic first steps in emergency planning is to accurately define the threat. On February 25 of this year, before this very committee, Dr. John J. Hamre of the Center for Strategic and International Studies, following an 8-month analysis of likely terrorism threats, testified that chemical and liquefied natural gas facilities were among the most vulnerable industrial facilities in our Nation. In analyzing the security of nuclear facilities, the Center found them to be extremely secure from nearly all types of potential acts.

It is this type of independent analysis that can correctly help direct emergency planning resources. The Federal Government should initiate its own comprehensive vulnerability assessment of nuclear and another industrial facilities. Actions such as requiring the hardening of any critical soft structures or implementing tighter FAA flight restrictions should be considered, if determined necessary.

With all the attention on nuclear readiness since September 11, one would assume that there have been some new Federal resources for municipalities to advance preparedness. Unfortunately, that is not the case. The fact is that there is no Federal agency currently providing direct nuclear preparedness funding to any State or municipality. Yet there is a tremendous demand for new emergency management technology and communication systems at the local level, as highlighted in New York State's James Lee Witt report.

For fiscal year 2003, Congress has provided \$165 million to fund every State and local emergency management requirement in the United States, including nuclear readiness. Contrast this figure with \$200 million in special earmarks for Homeland Security academic-type programs. If nuclear safety is a priority, then let's fund it accordingly.

Generally, the past technical and staff assistance provided by FEMA has been solid. The FEMA radiological program developed over the last 20 years could be used to help prepare another industry for terrorism. However, there is much more that needs to be done.

Overall, nuclear preparedness responsibilities should be given to the new Department of Homeland Security with a redefined relationship between FEMA and the NRC. The Department of Homeland Security with the NRC and the best scientific minds in the country should take the lead in updating what is known as NUREG 0654, or the nuclear planners' bible, last revised in 1987. And new exercises emphasizing fast-moving events such as terrorist attacks should be developed for use by States and held more frequently.

A central issue for nuclear emergency planners today is the validity of current plans' bases or standards that determine public protective actions. It is appropriate to ask post-September 11, are

we using valid planning standards? This question can only be answered at the Federal level.

Here is some of what we do know: First, a joint NRC-EPA task force of technical experts established the current 10 and 50-mile planning zones and their corresponding protective actions in 1980, based on a worst-case scenario that is a massive quick release of radioactivity.

NUREG 0654 makes no distinction between causes of a nuclear incident. It calls for planners to develop appropriate responses regardless of the cause and to expand or contract protective actions as required. And we are aware of no new studies or scientific evidence to indicate that the existing planning standards regarding the reach of potential radiation contamination are invalid.

Nevertheless, the Department of Homeland Security and the NRC should immediately reevaluate and recertify these current planning standards. Meanwhile, the Federal Government should work with States to design appropriate, new public precautionary measures to address the common-sense reality of spontaneous evacuation and the need for better public information.

As a congested State and a neighbor to New York, we are concerned about the issue of evacuation planning for all hazards, not just nuclear incidents. What we would like to see is the development of flexible regional traffic management plans that can address any hazard requiring a large relocation of citizens.

Progress can be made by working together. Utilities and local governments have implemented a series of new NRC security orders since September 11. In Connecticut, we have sent additional State and local assets to Millstone, organized regular meetings to improve coordination, developed and conducted new security exercises and established a State quick-reaction force to respond to any security need.

Although nuclear site security is good, the NRC should expeditiously complete its review of the existing design bases threat for which nuclear facilities must plan and consider providing dedicated Federal funding or security forces to supplement existing plant security measures.

In conclusion, emergency management professionals around the United States have done and will do a formidable job of planning for all threats to our homeland. However, to be successful, two key items are necessary: clear and coordinated guidance from Federal regulatory agencies and the tools to get the job done.

I'd be happy to address any questions you may have and thank you.

Mr. SHAYS. Thank you very much, Mr. Wiltse.

[The prepared statement of Mr. Wiltse follows:]

Statement for the Record

submitted by

**John T. Wiltse  
State Director, Office of Emergency Management,  
State of Connecticut**

to the

**Subcommittee on National Security, Emerging Trends,  
and International Relationships,  
Committee on Government Reform,  
United States House of Representatives**

for the hearing on

**"Emerging Threats: Assessing Public Safety and Security  
Measures at Nuclear Plant Facilities"**

**March 10, 2003  
Washington, D. C.**

Mr. Chairman, distinguished members of the Subcommittee on National Security, Emerging Threats, and International Relations, it is a privilege to appear before you. My name is John Wiltsie and I am the State Director of the Connecticut Office of Emergency Management. The Connecticut Office of Emergency Management (OEM) is responsible for maintaining the state's Radiological Emergency Response Plan which primarily addresses emergency response to incidents at the state's only operating nuclear facility, the Millstone Power Station in Waterford, Connecticut. Additionally, this state plan provides procedural guidance to address the potential impact from incidents at nuclear plants in neighboring states. OEM serves as the lead agency for coordinating the state's all-hazards emergency management program.

#### Introduction

Like all critical issues facing government today, achieving progress in the nation's ability to deal with an unplanned event at a functioning nuclear plant is a reflection of the amount of time, personnel and resources that have been dedicated to the task. One of the basics of emergency planning is that planning must be continuous. Any emergency management professional who does not recognize this principle is simply not facing reality. I fully support the need in this post 9/11 environment to re-visit the planning standards and assumptions that have guided nuclear safety preparedness over the last 25 years and to make any prudent changes with allocated resources. However, this process should be done in a thoughtful, well-designed review process led by the federal government with representatives from multiple disciplines and all levels of government. Progress cannot and will not be made in an emotionally charged, finger-pointing environment.

Nuclear facility emergency planning is one of the most successful and long-standing working partnerships between federal, state, and local government and private industry in the emergency management profession. It must be if we are to be successful. Although like all emergencies, the responsibility for the first response to a nuclear emergency rests with local and state responders. The complexity and extent of response requires substantial planning involvement, guidance, evaluation, and resources from the federal government.

The fact is that the emergency planning process for nuclear facilities gives us a good blueprint to tackle some of the other more likely threats that we face today. We can take away many lessons learned from the nuclear public/private partnership and apply them to other key industries.

With 25 percent of the nation's power coming from the nation's 103 operating nuclear plants, nuclear incident readiness deserves all of our attention, efforts, and resources. The central question for emergency managers is not whether nuclear plants should or should not be shut down. The central question is how can we advance existing readiness?

It is also critical that we look at industry and government readiness as a whole, not just at one facility. If we determine there is a problem with emergency planning assumptions, standards, and procedures at one plant, then new standards will have to be applied to all.

What is the Threat and How Can it be Minimized?

One of the basic first steps in emergency planning is to appropriately define the threat that you are planning for. This is one of the most difficult issues facing nuclear preparedness planners because there has been so much non-scientific, emotionally-charged materials published since the attacks of 9/11. This is truly the first step that must be completed by the federal government to advance readiness. I can tell you that as a state emergency management director, I have not seen nor been provided any official document from the federal government defining the potential new threats, the likelihood of success of these threats, and any recommendations on how to prepare. If there are new threats and vulnerabilities, then let's define them and address them. If there are not – or the likelihood is so remote – then let's say so and re-focus the attention of our citizens on more likely threats.

On February 25, 2003, before this very committee, Dr. Hamre, President and CEO of the Center for Strategic and International Studies (CSIS) delivered an eight-month analysis of the current threats from terrorism facing our nation as part of the Silent Vector Exercise conducted in October, 2002. In an analysis of facility vulnerabilities and potential means of attack, Dr. Hamre and his staff concluded that chemical and liquefied natural gas facilities were quite vulnerable with a capacity to inflict substantial casualties over a wide geographical area following a massive release. In analyzing the security of nuclear facilities, CSIS found that they were extremely secure compared to other types of industrial facilities. This study concluded that for the large variety of potential terrorism attacks, such as vehicle bombs, ground assaults, sea-born attacks, etc., there was a low probability of success against nuclear facilities. The Silent Vector Exercise and analysis did point towards two important new focus areas for nuclear emergency planning. First, that some non-reactor structures within a nuclear plant facility could be vulnerable to some types of aviation attacks. Secondly, that credible terrorist threats and/or attacks, regardless of whether they involve nuclear facilities, could produce spontaneous evacuations around nuclear or other critical facilities due to existing fears.

It is this type of independent analysis and study that can greatly help direct resources, efforts, and emergency planning as well as provide unbiased information to the general public.

Obviously, additional analysis and study should be conducted before ordering any new regulatory actions. However, this review and evaluation of actual threats is important and should be systematically initiated by the federal government. Actions such as requiring the hardening or strengthening of critical soft structures,

implementing tighter, more permanent FAA flight restrictions, and assisting utilities in speeding the process of converting from water-based spent fuel storage to preferred dry-cask storage may be beneficial in the long term but can only be implemented at the federal level.

Proactive, positive threat and regulatory analysis by the federal government would also greatly reduce the fears of citizens who live in the vicinity of nuclear plants throughout the United States. Although much of this fear is founded on misinformation promulgated by advocacy organizations, as mentioned in James Lee Witt Associates' nuclear preparedness report for New York State (JLWA Report), the perceived lack of government review and progress towards advancing nuclear site security contributes to this anxiety. From feedback from local officials and the public near the Millstone Plant, I can verify that the successful placement and enforcement of no-fly zones around this plant in the weeks after 9/11 had a tremendous positive and calming impact on the public. When looking to address and combat the impact of spontaneous evacuation in the zones surrounding a nuclear plant, these types of proactive steps at the federal level can greatly reduce the burden placed on local and state emergency managers.

Most importantly, by recognizing that nuclear facilities are, as we speak today, very well protected and by targeting our resources to specific areas requiring improvement, we can then allocate limited resources and time to more vulnerable targets.

Because of the strict federal regulation and over 20 years of federal, state, and local government efforts, the nuclear industry's planning and response procedures available to respond to a nuclear incident are among the best in the nation. There is a grave danger in allowing the emotional nuclear debate to overshadow and undermine sound planning efforts. What is needed is to take some of these methods and steps applied to the nuclear industry over the last 20 years and begin to focus our attention on other, less regulated facilities that pose an even greater threat.

#### A General Lack of Resources

With all the attention and focus on nuclear plant preparedness since 9/11, one could only assume that there has been at least some substantial influx in federal resources to help states and local governments advance preparedness. Unfortunately, nothing could be further from the truth.

The reality is that there is a lack of financial and new technological resources provided to states and municipalities to assist with nuclear emergency preparedness. And, remarkably, there has been no change to this status quo since 9/11. The fact is that no federal agency currently provides direct, nuclear preparedness funding to states or municipalities. FEMA even stopped funding the calibration and maintenance of required field dosimetry equipment several years ago.

Beside the nuclear safety accounts funded by utilities in most states, the only other funding available to state and local governments to support nuclear preparedness is the general emergency management program grant (EMPG) funding from FEMA that is supposed to fund the nation's emergency management system backbone. Remarkably, the EMPG program has been flat-funded by Congress for the last 10 years and received a modest \$29 million increase to a national level of \$165 million for Fiscal Year '03. This \$165 million used to fund every emergency management office and requirement in the United States, including nuclear readiness, must be contrasted with the \$200 million earmarked for special terrorism consortiums and academic programs this year. Clearly, we have an issue with funding priorities.

One of the most surprising resource issues is the lack of federal support to the nation's host communities who are critical to emergency plans around all 103 operating nuclear plants. These pre-identified communities, if resourced correctly, could also be a valuable asset in the event of a large, non-nuclear terrorism incident. Host communities are responsible for receiving and processing large quantities of citizens evacuated from the 10-mile nuclear Emergency Planning Zone (EPZ). Services that they provide includes monitoring vehicles and citizens for radiation levels, decontamination, registration and family reunification, sheltering and feeding, and medical support. This is a tremendous responsibility and these municipalities receive no government funding to assist them.

Many of the valid recommendations of the JLWA Report call for the implementation and installation of new warning/notification, communications, information tracking, and modeling technologies currently available. This is a desperate need in the large majority of states with nuclear plants and will only start to be solved with dedicated federal funding.

I cannot help but echo the testimony of Westchester County Executive Anthony Spano before the Subcommittee on Economic Development, Public Buildings, and Emergency Management, last month who said, "we, as a county, have gone about as far as we can go." If nuclear safety is a priority at the federal level, then let's fund it accordingly.

#### Federal Support to State and Local Officials

Overall, the past technical and staff assistance provided to state and local officials by the Federal Emergency Management Agency (FEMA), responsible for off-site nuclear preparedness, has been solid and extremely helpful. It is hoped that this relationship will continue as FEMA merges into the new Department of Homeland Security and begin to be transformed into a more forward-looking, preventative approach. We hope that there will be an even greater mix of federal resources and expertise available to state and local officials. Clearly we must all lean forward and plan for and prepare for the unimaginable, even if the likelihood is remote. The FEMA REP program has been developed over the past 20 years and could be used as a

model to prepare for terrorist attacks against other potential targets such as chemical and petroleum facilities.

However, there is much more that could be done at the federal level and now is the time to define those tasks as the new Department of Homeland Security comes into existence.

There needs to be a much closer working relationship between FEMA and the NRC as well as the NRC and state and local governments. Although primarily responsible for on-site planning and licensee matters, much policy, procedures, and programs regarding nuclear facilities – such as the recent potassium iodide offer to states – flow through the NRC.

Overall nuclear preparedness responsibility should be given to the new Department of Homeland Security with clear lines of communications to the NRC. In a post 9/11 environment and with the new Department that incorporates FEMA, now is the time to revisit and redefine the relationship between FEMA and the NRC, first established by President Carter in 1979, with an eye towards preparing for terrorist threats. As a first step, the existing Federal Radiological Preparedness Coordinating Committee (FRPCC), representing 17 federal member agencies and chaired by FEMA, should be reconstituted to become more effective at guiding and supporting state and local planning for radiological emergencies. It should also be expanded to include state and local representatives. To date, the FRPCC has been transparent and ineffective to community emergency managers in the field.

The Department of Homeland Security, in close cooperation with the NRC, should take the lead in initiating an immediate review and updating of NUREG 0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," last revised in 1987. This joint NRC/FEMA document is the basis for all our off-site planning, training, and exercising. Only by reviewing, updating, and re-publishing this document, using the best technical and scientific minds in the country, can we truly advance off-site planning at the state and local level. Although much of the public focus is on Indian Point currently, there are 102 other operating nuclear plants in 31 states around the nation that potentially face similar issues. One of the most critical components of this review must be to examine the 10-mile EPZ that I discuss in more detail below.

FEMA is to be commended for moving within the last year to a more outcome-performance based exercise evaluation model rather than simply a compliance-based program. However, additional and expanded exercising will be one of our keys to success. Although planning requirements in NUREG 0654 and current exercises call for states and municipalities to prepare for all types of scenarios, regardless of cause, new exercise scenarios emphasizing fast-moving events, such as terrorist attacks, must be developed and modeled for use by state and local authorities. Additionally, FEMA's current exercise timetable of biennial evaluated exercises for plume (10 mile) events and every six years for ingestion pathway (50 mile) events and host community

exercises should be re-designed. Although we exercise every year in Connecticut to keep our state and local resources ready, we must all work to increase the frequency of evaluated exercises.

#### The Planning Bases (10 and 50 mile Zones) and Evacuation Planning

A central issue surrounding the Indian Point controversy is the validity of current planning bases or standards regarding the types of public protective actions, such as evacuation, *between* the current 10 to 50 mile planning zones. Are we as state and local emergency planners using solid planning standards in this post 9/11 environment or not? The question is central to the future of nuclear preparedness in the United States. Most significantly, this question can only be answered at the federal level.

Clearly there is a lack of public understanding about how and why the scientific community established the current planning bases. Additionally, there is little recognition that state and local governments do have public protective measures in place between 10 and 50 miles all in accordance with federal guidance. These plans include procedures for air and water monitoring, embargoes of food products, warnings and guidance for agricultural facilities, and preparations for select area relocations if contamination levels are too high.

In June 1980, the NRC and the Environmental Protection Agency (EPA), in consultation with technical experts and scientists, established the 10-mile Emergency Planning Zone (EPZ) and the 50 mile Ingestion Pathway Zone as planning and response bases. Both these standards, and the specific requirements for each as outlined in NUREG 0654, were established with consideration of the worst case scenario – that is, a massive, release of radioactivity from an uncovering of the fuel rods in the reactor's core. In brief, the federal government set the 10-mile zone as the potential area where radiation levels might require protective measures, such as sheltering and evacuation. Because contamination dissipates as it spreads further from the source, the NRC/EPA Task Force determined the zone from 10 to 50 miles would experience much lower levels allowing continued human existence in most areas with some precautions such as protecting the food and water supply. This 10-mile planning standard has never meant to indicate that radioactive material would "magically" stop at the 10-mile limit. Rather, this parameter was chosen to define the area where the public may need to take *immediate* precautionary actions in the event of a nuclear release because of the potential for higher, harmful levels of radiation.

Therefore, when we speak of state and local REP plans, these plans primarily detail actions and procedures for the 10 mile zone including warning systems, traffic management, sheltering, evacuation, the use of host communities to monitor and shelter evacuees, separate school plans, etc. In 2002, the NRC and FEMA added the public use of KI as an additional precautionary action available to states on a voluntary (not required) basis within the 10-mile EPZ.

Now in a post 9/11 environment, it is prudent to ask if these planning standards are still valid. Should the planning zones be expanded, reduced, or otherwise modified and what new planning criteria and precautionary actions should be implemented in these modified zones? Are we endangering those most at risk within the 10-mile zone by considering expansion of this zone? Clearly, the scientific community must answer these questions before emergency managers can modify their plans.

We do know some facts about the current planning bases that are important to highlight. First, the zones and their corresponding protective actions were based on a worst case scenario, that is a massive release of radioactivity, regardless of the cause. Nothing has occurred in the nuclear industry since 9/11 to increase the amount of radioactivity in operating nuclear plants and in fact, since the planning bases were established 23 years ago, many advances have been made to nuclear fuel to reduce the hazards from a nuclear accident. We are aware of no studies or scientific evidence to indicate that the existing planning bases are invalid and need to be changed. The use by advocacy groups of terminology such as a 17.5 mile "peak death zone" and 50 mile "peak injury zone" are not recognized terms and have been discounted by the scientific community, including the JLWA Report.

Finally, in the unlikely event of a fast-breaking, massive release incident, immediate sheltering, not evacuation, will be the likely and plausible protective action recommended in the downwind area. Just as when faced with a sudden violent storm such as a tornado, it would be illogical to recommend evacuation of citizens into a highly contaminated environment that will dissipate with time.

We do call on the NRC and FEMA to immediately re-evaluate the current planning bases through a comprehensive study and announce this information to the American public. This re-certification and/or modification of the emergency planning standards is an essential first step in reducing nuclear incident anxiety throughout the United States and addressing new planning challenges, several of which were outlined in the JLWA Report. Meanwhile, the federal government should work with states and localities in designing appropriate new public precautionary measures for those areas beyond the 10 mile EPZ to address the realities of spontaneous evacuation and the need for more focused and accessible public information during an emergency.

#### Plant Security

States, municipalities, and utilities working together have made great deal of progress in the area of plant security by working together with the NRC and tapping their own resources.

Through a series of new security orders, the NRC has done a good job of working with the licensees to implement new procedures and providing specific guidance on steps to be taken at the different national homeland security threat levels.

Overall the security bar for nuclear facilities – previously set very high – has been appropriately raised. These procedural and physical improvements are clearly noticeable at Millstone Station and reflect the overall responsiveness of the industry.

As Dr. Hamre stated following the Silent Vector Exercise, "Nuclear plants ... are probably our best defended targets. There is more security around nuclear plants than around anything else we've got. ... One of the things we have clearly found in this exercise is that this industry has taken security pretty seriously for quite a long time and its infrastructure, especially against these types of terrorist threats, is extremely good."

It is also our understanding that the NRC is undertaking a review of the existing design basis threat for which nuclear facilities must plan to defend against. This is a prudent step post 9/11 and should be completed expeditiously with the involvement of the Department of Justice, Department of Homeland Security, and other key federal agencies.

The NRC has also done a fairly thorough job of synthesizing, declassifying, and distributing relevant intelligence and threat information to the licensees and to appropriate state agencies. Frankly, 18 months after the attacks of 9/11, NRC intelligence and threat advisories are the only written guidance from federal agencies being distributed to most state emergency management agencies. FEMA has yet to distribute a single threat advisory bulletin to state or local emergency management officials. This is unacceptable and must be changed immediately under the new Department of Homeland Security.

Despite the efforts of the NRC to upgrade on-site security procedures, there has been little to no new guidance from federal agencies regarding recommended changes to off-site planning, training, or exercising. And, of course, there have been no new federal resources to help state and local agencies implement new security measures in support of nuclear facilities.

Nevertheless state and local authorities have initiated many security improvements and planning steps utilizing their own resources in partnership with utility owners. In Connecticut, the local FBI office now maintains direct liaisons with plant security directors, exchanging information and guidance. Federal, state, local, and plant law enforcement/security personnel conducted a series of security exercises at Millstone in 2002 resulting in new procedures and protocols. With each change in the nation's homeland security levels, Millstone stakeholder organizations confer to review the plant's security status and implement any additional measures required, each prepared to provide additional resources. The Connecticut National Guard has invested considerable resources in developing a "quick reaction force" to respond to any needs at Millstone or other key state infrastructure sites. A Memorandum of Agreement has also been negotiated between the state and the utility outlining how they can access a variety of additional state security resources.

Although nuclear site security is very strong and states and towns have stepped up to the plate to provide additional resources in the short term, we encourage the consideration of dedicated federal funding and/or additional security forces to supplement existing plant security measures. This type of assistance would help alleviate the security burden now resting with individual utilities and state and local governments.

#### Connecticut, Indian Point, and Realistic Evacuation Planning

As a congested state and a neighbor to New York, we are concerned about the issue of evacuation planning for all hazards, not just nuclear incidents. These are our citizens and their fears are real and palpable, regardless of what the actual threats may or may not be.

Urban emergency transportation management and evacuation planning is a serious issue and should be a national priority post 9/11. What we would like to see developed are flexible, technologically-based regional all-hazards traffic management plans for all highly-populated areas of the United States. These plans and computer systems would help provide decision-makers with route and traffic flow options based on the particular on-going emergency. This work would need to include prior route planning, computer-based modeling and systems support, real-time visibility of traffic routes and systems, and of course, greater use of mass transit systems. Connecticut is currently working with the Department of Justice to identify potential support to initiate development of such a pilot transportation management plan.

Evacuation can be a critical response for many types of hazards, natural or man-made. Evacuation and emergency traffic management should be a heightened planning and resource priority of the new Department of Homeland Security working in cooperation with state and local officials.

#### Conclusion

Emergency management professionals around the United States have been doing a formidable job of planning for and responding to all threats to our homeland. They will continue to do so, no matter what challenges they are faced with. However, to be successful two key items are necessary: clear and coordinated guidance from federal regulatory agencies and the tools to get the job done.

I would like to summarize the recommendations I have shared with you today.

1. The new Department of Homeland Security should be charged with coordinating the nation's response to a nuclear plant incident and developing clear and close ties with the NRC.

2. The Department of Homeland Security, in conjunction with the NRC, should complete an evaluation of potential threats to the nation's nuclear plant infrastructure and order any necessary regulatory changes to reduce the impact of man-made events. This review should include consideration of federal financial and/or personnel resources to assist with standardizing and maintaining plant security requirements.
3. The Department of Homeland Security and the NRC should initiate an immediate, scientific analysis of the current off-site nuclear planning standards based on the post 9/11 environment and issue any required changes in an update to NUREG 0654. Additionally, federal agencies should immediately work with state and local officials to implement new exercise standards and develop comprehensive nuclear public information programs to improve overall citizen preparedness.
4. Congress should increase and target funding for the nation's emergency management structure to improve preparedness for potential nuclear incidents, including greater investments in nuclear warning, communications, information management, and modeling systems. Towns with nuclear plan responsibilities should be eligible for new federal funding, helping to create a national network of "advanced" municipalities capable of responding to a variety of large disasters.
5. All-hazards, urban traffic management plans and response systems should be made a priority at the national level. Pilot programs should be initiated in cooperation with state and local officials.

We look forward to advancing our nuclear preparedness through continued, effective partnerships in the months and years ahead. I would be happy to address any questions that you may have.

Thank you.

Mr. SHAYS. Mr. Bond.

Mr. BOND. My name is Richard Bond. I am the first selectman from New Canaan, CT. New Canaan is a town of approximately 20,000 people, 22 square miles in size, 1 hour from New York, 1 hour from Hartford and 3 hours from Boston. We are approximately 25 air miles—excuse me, from Indian Point Nuclear Plant.

At the Board of Selectmen's meeting on February 18, 2003, the following resolution was adopted and forwarded to the Town Council for their adoption at their meeting on March 12, this Wednesday. I will read parts of it: "resolved, that the Nuclear Regulatory Commission conduct a full review of the deficiencies identified in the independent review of the Indian Point Energy Center's emergency preparedness plan. Such independent review was conducted by James Witt Associates at the request of New York Governor George Pataki to improve understanding of the neighboring areas' ability to respond to a radiological event and to assist efforts to strengthen emergency preparedness."

The latter part is, further: "resolved, that in light of the significant problems identified by the Witt report, operations at the Indian Point facility be temporarily shut down until the issues raised by the report are fully resolved."

I think we're all saying the same thing. When you read the executive summary of the Witt report, the two things that stand out to me, the plan—third item. The plans do not consider the possible additional ramifications of a terrorist-caused release. The plans do not consider the reality of an impact of spontaneous evacuation.

And I would like to read also from the Indian Point 2 Nuclear Power Plant exercise report. Although as noted above, no exercise finding rose to the level of deficiency as defined under 44 CFR part 350 at this time, FEMA, in the absence of fully corrected and updated plans for the counties and States, cannot provide, "reasonable assurance," that appropriate measures can be taken in the event of a radiological emergency.

One more thing, then I'll—

Mr. SHAYS. Take your time.

Mr. BOND. Excuse me.

Mr. SHAYS. Take your time.

Mr. BOND. In my testimony, at the end it says, of particular concern to the residents of New Canaan is the subject of evacuation. We continue to view as the most critical challenge to our emergency plan and planner a scenario involving an incident which prompts large numbers of evacuees into and out of the New Canaan area. We are aware that this concern is shared with both our neighboring communities and with the Connecticut Emergency Management Office. As a result of the complexity of this issue, combined with inadequate direction from the State and Federal authorities, we have not been able to develop a practical and viable plan of evacuation.

The issues which inhibit a plan's development are many: location in the most densely populated corridor of the country, proportionate lack of limited roadways, rail and water infrastructure situated in the path of major urban escape routes and egress directions, limited by the physical obstacles of Long Island Sound and New York City are a few of the most obvious.

Further, we need to factor into our planning those assets which will be committed from State and Federal Government sources. As of yet, we have not been made aware of the level of guidance and support we may expect to receive.

We are perfectly capable of evacuating execution within the borders of New Canaan or larger-scale movements of town residents to nearby areas in response to local incidents. However, the evacuation response to regional or even broader emergencies must be developed within the scope of regional, State and Federal planning.

Thank you, sir.

Mr. SHAYS. Thank you.

[The prepared statement of Mr. Bond follows:]

Monday, March 10, 2003

**Testimony before The United States Congress  
House of Representatives Committee on Government Reform  
Subcommittee on National Security, Emerging Threats,  
And International Relations**

My name is Richard P. Bond; I have been the First Selectman of New Canaan, Connecticut since November 1996. New Canaan is a town of approximately 20,000 people, 22 square miles in size, 1 hour from New York City, 1 hour from Hartford and 3 hours from Boston.

New Canaan is approximately 25 miles from Entergy's Indian Point nuclear power facility.

At the Board of Selectman's meeting on February 18, 2003 the following resolution was approved and forwarded to the Town Council for their adoption at their meeting on March 12, 2003:

"RESOLVE that the Nuclear Regulatory Commission (NRC) conduct a full review of the deficiencies identified in the independent review of the Indian Point Energy Center's emergency preparedness plan. Such independent review was conducted by James Witt Associates at the request of New York Governor George Pataki to improve understanding of the neighboring area's ability to respond to a radiological event, and to assist efforts to strengthen emergency preparedness:

FURTHER RESOLVE that careful note be taken of the report by James Witt Associates which found, among other problems, that emergency planning at the Indian Point facility fails to take into account the possibility of a terrorist attack and insufficiently plans for the safe evacuation of local residents to protect them from radiation poisoning, specifically: (1) order an immediate closure of Indian Point's Unit Two and Unit Three reactors, (2) mandate immediate deployment of security measures sufficient to repel a terrorist attack on the reactors, spent fuel pools, control room or electrical equipment; and (3) separate and apart from above, order the immediate transfer of the plant's irradiated spent fuel rods (older than five years) from wet pool storage to a hardened on-site storage system;

FURTHER RESOLVE that, in light of the significant problems identified by the Witt report, operations at the Indian Point facility be temporarily shut down until the issues raised by the report are fully resolved"

Set forth below are some of the steps taken by New Canaan so that we can maximize survival of people, prevent and/or minimize injuries, preserve property and resources in the Town of New Canaan, Connecticut, and provide for the direction, control and continuity of the private sector and town government:

- Formalized an Emergency Management Structure as set forth in Attachment A;

- Established an Emergency Operation Center located in Town Hall with fire, police, ambulance and police "hot line" transmitters as well as radio equipment to operate on assigned civil preparedness frequencies;
- The fire station is equipped with a 50 kw generator and 5 additional electric generators, some of which are mounted on fire apparatus. The Fire Department is manned on a twenty-four hour basis. All of the active members have tone actuated monitor receivers. Members of the department are emergency medical technicians;
- All Police Department patrol vehicles are equipped with 2-way radios that are capable of communication with local fire and EMS services. The radios are also programmed to utilize a criminal justice band that allows communications with other police departments in Fairfield County. Additionally, our base station can patch information from the State "Hotline" frequency to all patrol units. The Hotline is a multi-jurisdictional frequency used by the Connecticut State Police and all police departments in the Fairfield County area.
- The 55 member New Canaan Volunteer Ambulance Corps, of which 50 members are emergency medical technicians, is equipped with two (2) two-way radio equipped ambulances and a paramedics response vehicle. Ambulances also have C-Med and Hear radios for direct communications with area hospitals. The ambulance service also has 30 walkie-talkies and a cell phone in each vehicle.

In addition to the above, the following services are available to the Town of New Canaan on a need and/or availability basis.

- There are no general hospitals in the community, however, there are three general hospitals located within 10 miles with a combined bed capacity of 1,000.
- The National Guard facility on the Town line has a transport battalion with radio, radar and communication equipment, trucks, water trucks, and recovery vehicles that can be used for disaster relief
- There are numerous shelter areas throughout town that are acceptable for natural disaster and other types of manmade emergencies that do not require shielding from nuclear radiation.
- Cell phone service is provided and is being expanded to cover the dead spots within the Town.

In the event of a natural, biological/chemical or nuclear disaster, the Town of New Canaan Emergency Preparedness Plan will be executed as outlined below:

#### COORDINATION OF THE NEW CANAAN EMERGENCY PREPAREDNESS PLAN

- The Chief Executive Officer (CEO) will call together such Town department heads and other Town officials and external agency representatives as deemed necessary by the

nature of the emergency and will brief them on the situation. The CEO will activate the Emergency Management Structure (see Attachment A)

- Following the briefing, all department heads and other persons involved will review their responsibilities outlined in the Emergency Operations Plan. They will then make preparations for the mobilization of their personnel as appropriate and necessary
  - The Emergency Operations Center (EOC) will be activated and maintained on a stand-by basis pending further orders. Department heads will designate their representatives to the EOC.
  - All emergency equipment, supplies and resources will be inventoried, checked and readied for emergency operations (response vehicles will be filled with gas and oil, emergency generators will be started and tested; radiological monitoring and hazardous material equipment, radios, flashlights, batteries, regulatory and safety signs, record forms, etcetera will be inventoried and checked for operational readiness).
  - Personnel, equipment, and resources will be readied for dispersal and where necessary, moved to appropriate locations on a stand-by basis according to the particular type of emergency.
  - The Emergency Management Director, in conjunction with the other Town security services, will coordinate the inspection of all communications and auxiliary generating equipment to ensure its operating capability.
  - News releases will be prepared for newspapers, radio, local and town- specific television channels, and the Town Web site to be used only when directed by the Chief Executive Officer.
  - Preparations will be made to alert, if necessary, the entire population of the Town, including organizations, agencies and/or groups serving the handicapped, elderly and non-English speaking residents.
  - School officials, public and private, present at the briefing by the Chief Executive Officer will take all necessary steps to safeguard the school population at any time that school is in session. Institution and agencies not represented at the briefing will be alerted by the Emergency Management Director, if deemed necessary by the Chief Executive Officer.
  - In an emergency of a local nature, the State Office of Emergency Management and communities with which mutual aid agreements exist will be alerted.
  - During this phase, the overall readiness of the Emergency Operations Center for operation on a 24 basis will be initiated.
- Once the immediate danger to Town residents has stabilized a recovery operation will begin:
- Continue rescue operations. If a radioactive environment exists, ensure monitoring and decontamination when possible. Monitoring and decontamination should precede all other recovery operations.
  - Provide medical assistance to the sick and injured.

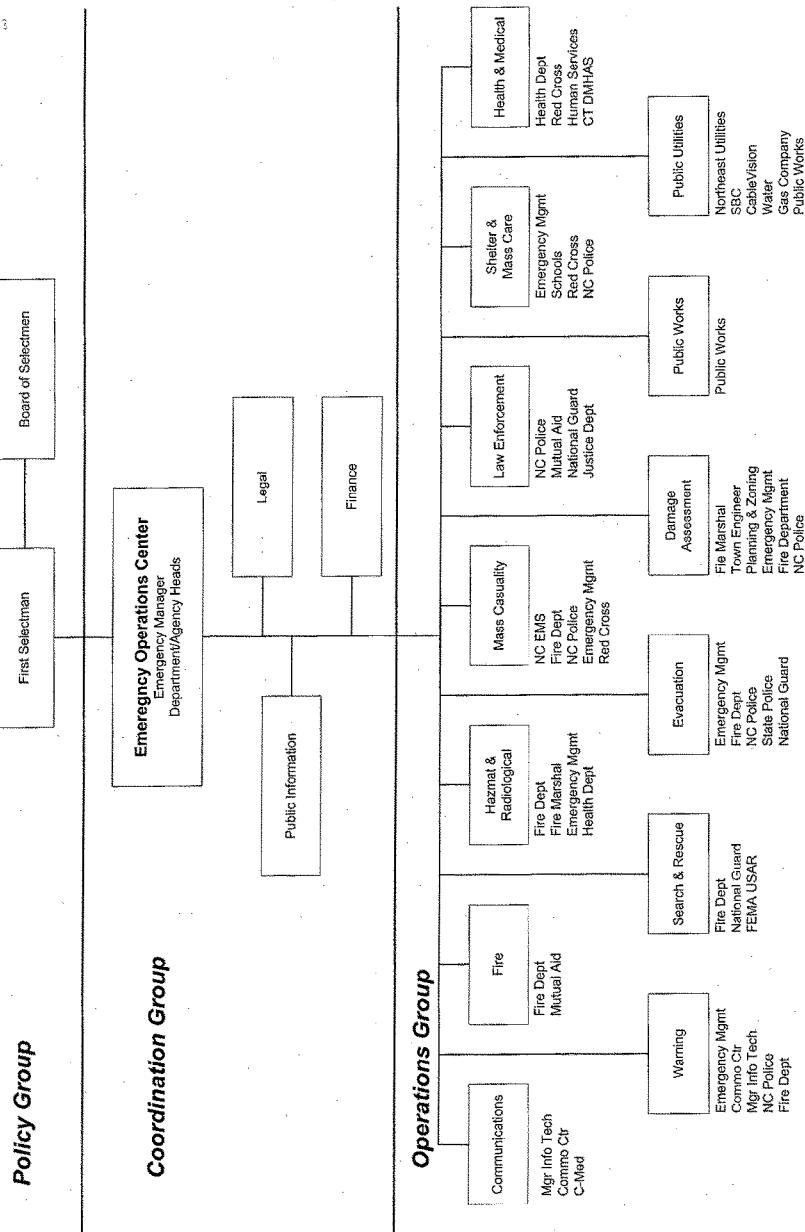
- Arrange for temporary shelter, housing, flood and clothing where necessary.
- Make complete evaluation of the situation, including damage assessment and plan for restoration. Determine restoration priorities.
- Certify buildings and/or areas as being safe for habitation.
- Commence restoration of the Town following established priorities.
- Assist public utilities with the restoration of service where necessary and when requested.
- Provide emergency mortuary service.
- Maintain the Emergency Operations Center in operation until such time as the emergency and recovery operations no longer requires it.
- Provide for protection from looting and vandalism.
- Establish and maintain a disaster inquiry center.
- Maintain facilities for the dissemination of information to the public.
- Arrange for financial assistance where necessary to help residents and Town government to recover from the disaster. This will be done in cooperation with State and Federal agencies.
- Destroy contaminated food, drugs and other material.

Of particular concern to the residents and officials of New Canaan is the subject of evacuation. We continue to view as the most critical challenge to our emergency plan and planner, a scenario involving an incident which prompts large numbers of evacuees into and out of the New Canaan area. We are aware that this concern is shared with both our neighboring communities and with Connecticut's Emergency Management Office. As a result of the complexities of this issue, combined with inadequate direction from the State and Federal authorities, we have not been able to develop a practical and viable plan of evacuation.

The issues which inhibit a plan's development are many. Location in the most densely populated corridor of the country, proportionate lack of limited roadways, rail and waterway infrastructure, situated in the path of major urban escape routes and egress direction limited by the physical obstacles of Long Island Sound and New York City are a few of the most obvious.

Further, we need to factor into our planning those assets which will be committed from state and federal government sources. As of yet, we have not been made aware of the level of guidance and support we may expect to receive.

We are perfectly capable of evacuation execution within the borders of New Canaan or larger scale movements of town residents to nearby areas in response to local incidents. However, evacuation in response to regional or even broader emergencies must be developed within the scope of regional, state or federal plans,



Mr. SHAYS. I'll start out the questions and just ask, just preface my comments by saying that Ms. Kelly's—her constituents are directly impacted. They're in the 10-mile radius, and she's already begun this process and had a hearing in the Department of Transportation and so on.

We felt that the value of this hearing was to then look at what happens to those folks who are just kind of outside that boundary of 10 miles, but within the 50-mile radius, and also to look at what impact one State has over another.

For instance, this was the—the Witt report was requested by the Governor of New York logically. It's overseen by the Governor of New York. We have Millstone 1, 2 and 3, big concerns there as well, so this report, this hearing is not just about Indian Point. It's to appreciate, help this committee appreciate how a community looks at the issue in general.

For instance, Mr. Bond, I'm curious—but happy to have others respond. I'm curious as to when a plan is devised, let's just say there's been a plan for Indian Point for years. Were you made aware of the plan? Were you told how New Canaan fit into this plan?

Mr. BOND. No.

Mr. SHAYS. OK. That's it?

Mr. BOND. That's it.

Mr. SHAYS. So we have a plan—we're going to get through this panel real quick with answers like that, but—

Mr. BLUMENTHAL. He's a lawyer's dream.

Mr. SHAYS. You think he's a lawyer's dream, Dick. You wait until you get him on the stand; you'll regret it.

But the bottom line to it is, you're not aware of that plan?

Mr. BOND. No, I'm not.

Mr. SHAYS. And so we have a plan.

Maybe, Mr. Wiltse, you could answer me, are you aware of that plan? I mean, you're in charge of emergency preparedness and so on. Would you be made aware of a plan? Not the last plan, but you know, in general?

Mr. WILTSE. We, of course, are aware of New York State's plan and the county's plan, and in the event of an incident at Indian Point, we would be working with them.

Our responsibility, of course, is to do the planning in accordance with the Federal requirements and guidance for those communities in Connecticut that are within the 50-mile zone. So that is where our planning, if you will, begins and our responsibilities begin.

Mr. SHAYS. So is it your responsibility to make sure that the first selectman of New Canaan has an awareness of the plan? Is that your responsibility?

Mr. WILTSE. That would be our responsibility to ensure that he knows the standards that are currently set for the 50-mile—what's known as the 50-mile ingestion pathway procedures and plan.

Mr. SHAYS. OK. And we are not just talking about a superficial presentation to the first selectman saying, you know, they have a plan and they will be coming over to your territory. Are you required to develop a plan that exceeds the 10-mile radius and are you supposed to help design an evacuation for residents of the New Canaan? Who does that?

Mr. WILTSE. Based on current Federal standards, sir, there is no requirement for evacuation plans for a nuclear incident beyond 10 miles, so there are no requirements or planning standards there.

What Mr. Bond referred to, and I also referred to in my testimony, we do see a need to develop, if you will, all-hazards regional plans, especially in congested areas like we have in southwest Connecticut, that could be put in place and utilized for whatever the hazard is that might affect multiple towns; and that is clearly something that needs to be worked out through all levels of government working together.

Mr. SHAYS. And before I call on you, Mr. Blumenthal, kind of give me a sense of what I'm asking, how you respond to what I'm asking and what you're hearing. Try to give me a sense of what this means to you in terms of the 10-mile versus the 50, in terms of one State versus another, in terms of a local community really not quite knowing what their requirement is and what they should do, the fact that we don't even have, it appears, a plan outside that 10 miles.

I mean, there are two ways you get impacted: One is, you get people from within the 10 miles coming in and interacting with your constituents, you know, using your roads and so on; the other issue is the need for evacuation from New Canaan. Should New Canaan have an evacuation plan?

So, Mr. Blumenthal, I'm going to ask you to kind of walk me through some of this.

Mr. BOND. Just one comment.

Mr. SHAYS. Sure.

Mr. BOND. As of this point in time, there are roughly 445,000 people coming into Fairfield County from outside Fairfield County.

Mr. SHAYS. Right now, just in terms of the work traffic?

Mr. BOND. Work traffic.

Mr. SHAYS. Yes.

Mr. BLUMENTHAL. Let me respond, if I may.

I think there is a need for planning at the local as well as the State level, and the two have to be interrelated. In a sense, the local communities are now planning even with an inadequate plan on the part of the plant itself—New Canaan, for example, Westport, a number of the communities who are aware of the effect on them.

One of the problems is that many Connecticut communities are not sufficiently aware of the dangers that are posted. But the impact on Connecticut will be real and immediate and, in fact, the impact on New York will be very sizable as well, because the flight from New York will be to Connecticut. And Connecticut's roads on a good day, at certain times, are parking lots, they are gridlocked. So the evacuation plans involving New York have to be contingent on State and local planning in Connecticut.

Likewise, our food and water supplies, many of them, come from New York. They would be contaminated. We would face the same problems as New York, whether we were in the 10 or 20 or the 50-mile radius.

But I think one of the key aspects that you have raised is that a terrorist attack will not involve simply, if there is one, God forbid, a strike against the facility itself; presumably it would also in-

volve some effort to cause disruption and damage elsewhere—for example, the Tappan Zee Bridge—which would again force evacuation into Connecticut.

And I guess, you know, to put it in legal terms that are applicable to both Connecticut and New York, there is a requirement that these facilities have plans that take into account all these ramifications in order to continue operating. Their license is contingent on adequate emergency preparedness plans, and our point is that—and we'll bring it to the courts if necessary—they have an obligation to comply with that law.

Mr. SHAYS. OK. You don't have questions?

Mr. TIERNEY. No, sir.

Mr. SHAYS. Mrs. Kelly, do you have any questions you want to ask?

Mrs. KELLY. Thank you, Mr. Chairman.

I have no questions, except that I am delighted that you have a panel here of people from our neighboring State of Connecticut, because you are absolutely right, Mr. Blumenthal, if we don't work together, the people who live within the 50-mile radius of this plant could conceivably be in jeopardy.

Given the fact that the prevailing wind usually runs from west to east, but also looking at the number of nor'easters we've had this year, dumping snow all over us, there are factors like that we all need to think about, given our tortuous road system in many instances, so I'm delighted you're here.

And I thank you, Mr. Chairman, for holding the hearing that so that we can work together like this.

Mr. SHAYS. I'm just interested, I don't think any other Members have questions. You don't?

OK. I would be interested in just understanding your concept of the legal requirements. You said, it's just not my opinion; you said "the legal requirements."

Speak to me about the legal requirements. And what legal rights does Connecticut have?

Mr. BLUMENTHAL. We have submitted a petition to FEMA under 44 CFR 350. And the petition essentially is to compel FEMA to follow its own regulations and insist on an emergency preparedness plan as a condition for the plant continuing to operate.

As you know, FEMA has found the current plan to be inadequate. It has asked a number of questions of New York officials, Governor Pataki and the four county executives, who have declined to certify that plan. In our view, FEMA has an independent responsibility to take action. I think that the deadline—the earlier deadline given by Congresswoman Kelly, than the 75 or 150 days that FEMA wants to take, is much more desirable.

But the point is that the NRC, also under its regulations in our view, has responsibility. There has been a petition to the NRC—similar to the one that we brought to FEMA—to compel it to suspend the license of the plant so long as there is no adequate emergency plan, again pursuant to Federal law. And that action, I believe, also has been, and can be, taken to Federal court.

But all of what we have been describing for this committee are potential damages that give us the standing, the right and the opportunity to be in court, challenging the current plan and holding

accountable the Federal agencies that thus far have declined, as was evident in the letter from the chairman to you, to recognize their responsibility.

Mr. SHAYS. OK. Now let me just be clear just for the record.

The plan, the legal—you have the right to challenge the plan that has not been acceptable, that doesn't meet legal requirements. It doesn't do the job. But that is just simply a plan that has to deal with the 10-mile radius.

Mr. BLUMENTHAL. In our view, no. It relates to the 50-mile radius and possibly beyond, because we are within the 50-mile radius and the emergency preparedness plan includes that area.

Mr. BOND. Mr. Chairman.

Mr. SHAYS. Yes, Mr. Bond.

Mr. BOND. Going back to 44-350, in the absence of fully corrected and updated plans for the counties and States that cannot provide reasonable assurance that appropriate measures can be taken in the event of a radiological emergency, it seems to me the plans have to be rewritten, not just say "meet them." I don't disagree with that. But I think they need to be rewritten to what the world is like today.

Mr. BLUMENTHAL. And they need to be brought from the Stone Age into the post-September 11 era, where terrorist attack is an urgent and immediate and realistic fear.

Mr. SHAYS. Mr. Wiltse, how many people do you have on your staff?

Mr. WILTSE. Currently, sir, I have 27.

Mr. SHAYS. OK. Is 27 enough people for you to be able to work with all the communities that potentially you have to deal with Indian Point and Millstone 1, 2 and 3? I mean, it seems to me like you don't have the resources to be able to do this job.

Mr. WILTSE. That would be a very fair statement, Mr. Chairman. As I mentioned in the testimony, our nuclear planning staff—and I think it's similar in most States—are fully funded by the utility. There is no fenced or dedicated funding from the Federal Government for nuclear planning.

But even more so, our issues at the State level, I think we really have to focus at the municipal level.

One of the key parts, if I could mention, of any plan and a key component when you're looking at the evacuation of the 10-mile plan is the importance of host communities. Host communities, based again on the Federal guidance, are where evacuees are directed to go to get a variety of very important things, everything from KI to monitoring to shelter and food if they need it.

All of those communities use their own resources except what they might receive from the special State utility funds, again funded by the utilities. There's a great burden on those municipalities, and quite frankly, it's just because they're professional and they know that there's a need that they step up, they step up to the challenge.

Mr. SHAYS. Let me just ask what you suspect when we ask—and I'm going to be asking the next panel if the general public knows about—if they're within 50 miles of a nuclear plant, if they know that one, there is a plan; two, if they know what that plan is; and

three, if they know what they're supposed to do to implement that plan.

What do you think the response would be around the country? Do you think that we're just a little behind others, or do you think that it's probably typical in a lot of parts of the country?

Mr. WILTSE. I'd say, Mr. Chairman—I think it's typical in all parts of the country. Anyone living within a nuclear zone, one of the great needs and again something that requires, obviously, a lot of resources is public information and education not only, also, for the public, but for first selectmen and those officials who need to, if you will, have the most immediate information available.

There's a great deal—as Mr. Witt and his staff pointed out in the study, for new ways to—technological ways to communicate directly with municipalities so that they can communicate with their people. There is not a good network of communications systems, computer-based information systems throughout the Nation. And that's definitely something that we need to work at.

But simply the area of public information, reaching out to the public, only by investing there are we going to be able to address the issue of spontaneous evacuation.

I think Mr. Witt, in—if you will, the—his final comments that he just released really hit on it and made a very good clarification. He was not saying that plans are—should be disregarded, the current plans, and that they need to be thrown out; the point that he made is that they need to be improved.

We do have some basic plans. They're certainly better than not having any plans, as I mentioned, as in the case of some other industries. But that means we need to invest and put the investment in to make the plans what they need to be.

Mr. SHAYS. Thank you.

Is there anything that we need to put on the record, Mr. Bond? I mean, your concise "no" is probably the most important answer that we've received during the whole hearing.

Mr. BOND. I think, in all due respect, Connecticut has done some interesting things. As of probably this week, they've—the health—Dr. Garcia has put in a system with every health director in every town, and New Canaan has a Nextel. With one number ring, they can contact all the health directors in the whole State. That's one thing.

And then they are making available to every police department, ambulance corps and fire department an 800-megawatt radio.

So we are making some progress, but we need some guidance and we need some—from the State and more so than this, particularly on the evacuation concern. And also we think that—again, that it would be preferable to correct the errors now and not wait for 6 months or a year. I think it'd be helpful.

I think the feeling of the community would be so much—greatly improved by the fact not to shut it down for good, make it right then come on back.

Mr. SHAYS. OK.

Mr. Blumenthal, anything that you would like to put on the record before we get to the next panel?

Mr. BLUMENTHAL. Once again, my thanks for helping to raise awareness in Connecticut about this problem because, in answer to

your question, Connecticut is less aware than it should be. In many parts of Connecticut, if you ask that question about where is Indian Point and should we be preparing for a possible emergency, they would say: Indian Point? It's not on their radar screen, and it should be.

And there should be—and I would just conclude with this thought. There should be better planning and coordination between the two States in communication, evacuation, medical and food and other supplies; and right now there is virtually none.

Just as the answer to your question about New Canaan was "no," the answer to the same question, if asked, is there ongoing planning for Indian Point as a possible disaster area between the two States, the answer would be "no." That is really an irony, because one of the findings of the Witt report is that the news of a disaster, whether it is a terrorist attack or any other kind of disaster, will spread instantaneously. And the current plans are inadequate because they assume that the government will be disseminating this information in the way that it wants to. Rather the public will be using cell phones and all the technology that are really not taken into account by the current plan. So, again, my thanks to you for increasing public education which we need to increase even more.

Thank you.

Mr. SHAYS. I thank you. I'll use my old theology just before concluding here to say that I suspect that the view used to be, and still is, unfortunately, that if we tell people about a evacuation plan and what they have to do, they will start raising questions about why do they need to know this. And then, unfortunately, it might call into question whether we need nuclear energy at all, which I happen to believe has a role to play in this country.

And so I think the industry probably tries to downplay it. But if we're going to be honest with the American people if we have this type of energy—and we do; we get 20 percent of it for electricity throughout the United States—we'd better know how to respond to it and how to protect ourselves.

But in one sense this is kind of a surreal conversation, though isn't it because if we had to evacuate, there's the question, would you ever get to come home, which is a little unsettling?

I thank you all very much. I appreciate your waiting so long and this is very helpful to us. Thank you so much, gentlemen.

Mr. SHAYS. We're going to do our panel three, which is Mr. Jim Wells, Director, Natural Resources and the Environment, U.S. General Accounting Office; Mr. Michael Slobodien—if I'm saying that correctly; I'm probably not—director of Emergency Programs, Entergy Nuclear Operations, Inc.; Mr. William Renz, director, Nuclear Protection Services and Emergency Preparedness, Dominion Resources Services, Inc.; Ms. Angelina Howard, executive vice president, Nuclear Energy Institute; Mr. Alex Matthiessen, executive director, Riverkeeper; and Mr. David Lochbaum, nuclear safety engineer, Union of Concerned Scientists. Big panel, but a very important panel. We appreciate your being here.

Thank you for staying—standing, and I will swear you in now. Is there a likelihood that you would be calling on someone else to be able to respond? We'll get another chair if we need it.

Is there anyone else that might? If you are, I'd appreciate your standing up, and we'll swear everyone in; and if we call on you, we'll just know that you were sworn in.

Raising your right hands, thank you, gentlemen and ladies.

[Witnesses sworn.]

Mr. SHAYS. Note for the record everyone has responded in the affirmative. Please be seated. Do we have enough chairs?

Mr. Renz, I'm going to have you slide a little to your right just a speck, I guess, and then slide over a little bit.

Yes, that's good. OK. Have we left anyone out?

I may have not pronounced your name correctly, sir.

Mr. SLOBODIEN. Slobodien.

Mr. SHAYS. Slobodien?

Mr. SLOBODIEN. Yes.

Mr. SHAYS. Thank you. I'm sorry I didn't pronounce it correctly.

It's wonderful to have you here. I'm sorry you had to wait so long. I suspect you probably figured that might happen.

But what I would appreciate is that you recognize that this is a very important panel; we're looking forward to some of the interaction that will take place between you. I would be more inclined to want to hear—have you speak for 5 minutes rather than 10, given the size of this panel. And I think we all will have questions for you.

So we'll start, I guess the way you're seated, OK? And that's the way we'll do it.

Mr. Wells.

**STATEMENTS OF JIM WELLS, DIRECTOR, NATURAL RESOURCES AND THE ENVIRONMENT, U.S. GENERAL ACCOUNTING OFFICE; MICHAEL J. SLOBODIEN, DIRECTOR, EMERGENCY PROGRAMS, ENERGY NUCLEAR OPERATIONS, INC.; WILLIAM F. RENZ, DIRECTOR, NUCLEAR PROTECTION SERVICES AND EMERGENCY PREPAREDNESS, DOMINION RESOURCES SERVICES, INC.; ANGELINA S. HOWARD, EXECUTIVE VICE PRESIDENT, NUCLEAR ENERGY INSTITUTE; ALEX MATTHIESSEN, EXECUTIVE DIRECTOR, RIVERKEEPER; AND DAVID LOCHBAUM, NUCLEAR SAFETY ENGINEER, UNION OF CONCERNED SCIENTISTS**

Mr. WELLS. Thank you, Mr. Chairman. We are pleased to be here today to discuss emergency preparedness at commercial and nuclear power plants.

Twenty-four years ago, March 1979, the accident at Three Mile Island challenged emergency planning. The residents at Indian Point Nuclear Power Plant awoke in February 2000 to similar concerns. Following the September 11 terrorist attack, nuclear power plants have once again received a high level of focus and concern. Almost 2 years later, we're sitting here today learning that we still have to get our act together, and we still have a ways to go on emergency planning.

You have already heard testimony from NRC, FEMA and others on the events at Indian Point. Clearly, no one is going to take emergency preparedness lightly. But as you can see today, Mr. Chairman, getting facts to questions is like asking auditing ques-

tions, that it is sometimes difficult to get the answers; and we share your pain.

At the time we looked at Indian Point, NRC had identified a number of emergency preparedness weaknesses that had gone largely uncorrected. I think it would be fair to say that over the years, Consolidated Edison's efforts to improve were not completely successful. And it's fair to say from our perspective that the NRC and its IGs had maintained a strong regulatory posture in finding problems. They identified problems, but didn't necessarily always have the solutions.

For example, 1996, 1998, 1999, NRC identified communication weaknesses. These included delays as simple as just notifying and getting the pagers to work so that people could be told of an emergency. The IG also issued a strong report. The plant has, and is, taking corrective actions to address these problems. According to a 2001 NRC inspection report, these actions, when they went in and looked, were not fully effective. Although NRC is finding problems—although of a minor nature, it expressed the view that the existing program could protect the public.

The four New York communities surrounding the facilities also had their problems and made improvements over time. But we continue to hear a common theme that suggests that better communication among NRC, FEMA, State and local entities is clearly needed.

For example, the classic case of confusion occurred when the plant reported that a release had occurred, but posed no threat to the public; yet, the county officials reported that no release had occurred. This contradictory information has led to credibility problems with the media and the public, and it continues to do so.

We also reported the concern, and the main message of our GAO report was that the NRC and the FEMA communication was oriented toward the State officials and less with local officials. Both NRC and FEMA continually told us that they had limited resources that forced them to rely on the States to work more closely with the counties.

Effective communication, over and over again, has been pointed out as being extremely critical to respond to a radiological emergency. You've heard it today.

We recommended that NRC and FEMA reassess these policies for communicating primarily with the State and in those instances where the local communities are clearly the first to have to respond to this emergency.

Mr. Conklin today, Homeland Security, used the terminology, "working closely with the local communities." Mr. Miller, NRC, used the words "closely monitoring all the existing reports" that were coming up and used the terminology "stepped up meetings." I guess it depends on your definition of "closely," because we called the local officials as we got ready for this hearing and we asked questions about how had communications improved. And I think it would be a general, valid statement to say that the answers we were getting back from many of the local officials was that not much has changed.

So I guess your definition of "closely" may depend on whether it's minuscule or some, but that was what we were able to find in a few days before coming to the table here today.

You also asked us our opinion about the latest review that had been done at Indian Point, the draft Witt report. Clearly, the Witt report was more technical than our 2000 report, but they both addressed difficulties in communications and in planning inadequacy. The Witt report implied that the current radiological response system and capabilities are not adequate to protect the public from an unacceptable dose of radiation.

We are aware, Mr. Chairman, that FEMA has disagreed with some of the issues raised, but they also admit that the report does highlight several issues that are worth considering in order to improve emergency preparedness not only at Indian Point, but perhaps more importantly, nationwide.

And at the risk, Mr. Chairman, of raising your ire, we also saw where NRC had commented that the report gives undue weight to the impact of terrorism. But the point, regardless of these quick positions, is that if the Witt findings are true, these findings may have merit across the board at all the nuclear power plants, and clearly more needs to be done.

Mr. Chairman, in summary, let me just say that the post-September 11 environment clearly raises new challenges for NRC and FEMA. NRC and the nuclear industry, some of which are here on the panel today, they deserve a lot of credit for taking action quickly to strengthen their security as a result of a changing world. However, let me just make two quick points.

First, at Indian Point, there's been a lot of ink in the press. There've been a lot of audit reports in GAO, from the NRC IG and even the new Witt study questioning the weaknesses in emergency preparedness. We, today, are still concerned that, as revealed in the hearings today, problems in emergency preparedness are still commonplace.

Mr. Chairman, in your opening statement you used the terminology, "deficiencies can linger for years;" that is unfortunately too true. Even minor problems can cause concern.

As to what happened at Indian Point, senior management officials must clearly pay attention to emergency preparedness. These plans have not received, as they should, greater visibility—sometimes minimal direction and inadequate resource allocation. We heard 27 people in the State of Connecticut, for instance.

Second, the point I want to make is the old saying, "What gets watched gets done," is particularly appropriate here. Hearings like this today that continue to focus on the NRC mission to provide quality oversight—I'm not sure we heard quality oversight today, but clearly our goal is to assist you, Mr. Chairman, and your committee in sorting through where do we go from here as a nation. And I agree 100 percent that the public has a right to know.

Thank you, Mr. Chair. I'll conclude my remarks.

Mr. SHAYS. Thank you, Mr. Wells.

I just would thank you for being here and say to you that I appreciate that the GAO is willing to be on panels with others that makes it more interesting rather than a separate panel. But it speaks well for your organization and we thank you for that.

[The prepared statement of Mr. Wells follows:]

---

**GAO**

**United States General Accounting Office**

**Testimony**

Before the Subcommittee on National  
Security, Emerging Threats and International  
Relations, Committee on Government  
Reform, House of Representatives

---

For Release on Delivery  
Expected at 2:00 p.m.  
Monday, March 10, 2003

**NUCLEAR REGULATION**

**Emergency Preparedness  
Issues at the Indian Point 2  
Nuclear Power Plant**

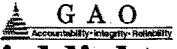
Statement of Jim Wells, Director  
Natural Resources and Environment



---

GAO-03-528T

March 2002

**G A O**  
  
**Highlights**

Highlights of GAO-03-528T, a report to the Subcommittee on National Security, Emerging Threats and International Relations, Committee on Government Reform, House of Representatives

#### Why GAO Did This Study

After the September 11, 2001, terrorist attacks, emergency preparedness at nuclear power plants has become of heightened concern. Currently, 104 commercial nuclear power plants operate at 64 sites in 32 states and provide about 20 percent of the nation's electricity. In July 2001, GAO reported on emergency preparedness at the Indian Point 2 nuclear power plant in New York State (*Nuclear Regulation: Progress Made in Emergency Preparedness at Indian Point 2, but Additional Improvements Needed* [GAO-01-605, July 30, 2001]). This testimony discusses GAO's findings and recommendations in that report and the progress the plant, the Nuclear Regulatory Commission (NRC), and the Federal Emergency Management Agency (FEMA) have made in addressing these problems. GAO also provides thoughts on the findings of a soon-to-be-issued report (the Witt report) on emergency preparedness at Indian Point and the Millstone nuclear power plant in Connecticut, and the implications of that report for plants nationwide.

Since 2001, the Entergy Corporation has assumed ownership of the Indian Point 2 plant from the Consolidated Edison Company of New York (ConEd).

[www.gao.gov/cgi-bin/getpt?GAO-03-528](http://www.gao.gov/cgi-bin/getpt?GAO-03-528).

To view the full report, including the scope and methodology, click on the link above. For more information, contact Jim Wells at (202) 512-3841 or [wells@gao.gov](mailto:wells@gao.gov).

## NUCLEAR REGULATION

### Emergency Preparedness Issues at the Indian Point 2 Nuclear Power Plant

#### What GAO Found

In 2001, GAO reported that, over the years, NRC had identified a number of emergency preparedness weaknesses at Indian Point 2 that had gone largely uncorrected. ConEd had some corrective actions underway before a 2000 event raised the possibility of a leak of radioactively contaminated water into the environment. ConEd took other actions to address problems during this event. According to NRC, more than a year later, the plant still had problems similar to those previously identified—particularly in the pager system for activating emergency personnel. However, NRC, in commenting on a draft of GAO's report, stated that ConEd's emergency preparedness program could protect the public. Four counties responsible for responding to a radiological emergency at Indian Point 2 had, with the state and ConEd, developed a new form to better document the nature and seriousness of any radioactive release and thus avoid the confusion that occurred during the February 2000 event. Because they are the first responders in any radiological emergency, county officials wanted NRC and FEMA to communicate more with them in nonemergency situations, in addition to communicating through the states. However, NRC and FEMA primarily rely on the states to communicate with local jurisdictions.

Since GAO's 2001 report, NRC has found that emergency preparedness weaknesses have continued. For example, NRC reported that, during an emergency exercise in the fall of 2002, the facility gave out unclear information about the release of radioactive materials, which had also happened during the February 2000 event. Similarly, in terms of communicating with the surrounding jurisdictions, little has changed, according to county officials. County officials told GAO that a videoconference system—promised to ensure prompt meetings and better communication between the plant's technical representatives and the counties—had not been installed. In addition, NRC and FEMA continue to work primarily with the states in nonemergency situations. Although they note that there are avenues for public participation, none of these is exclusively for the county governments.

GAO did not evaluate the draft Witt report or verify the accuracy of its findings. The draft Witt report is a much larger, more technical assessment than the 2001 GAO report. While both reports point out difficulties in communications and planning inadequacies, the draft Witt report concludes that the current radiological response system and capabilities are not adequate to protect the public from an unacceptable dose of radiation in the event of a release from Indian Point, especially if the release is faster or larger than the release for which the programs are typically designed. GAO is aware that, in commenting on a draft of the Witt report, FEMA disagreed with some of the issues raised but said the report highlights several issues worth considering to improve emergency preparedness in the communities around Indian Point and nationwide. NRC concluded that the draft report gives "undue weight" to the impact of a terrorist attack.

United States General Accounting Office

Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss emergency preparedness at operating commercial nuclear power plants. Twenty-four years ago, in March 1979, the accident at the Three Mile Island nuclear power plant in Pennsylvania created considerable alarm and uncertainty in the surrounding areas about the plant's safety and the adequacy of emergency planning. On the broader front, the American public focused not only on Three Mile Island but also on safety and emergency preparedness at nuclear power plants nationwide. With the September 11, 2001, terrorist attacks, public concern about the plants has increased again. Concerns have focused principally on ensuring the plants' physical security and then on emergency preparedness in case terrorists are successful in their attacks. The nation currently has 104 commercial nuclear power plants licensed to operate at 64 sites in 32 states. These plants provide about 20 percent of the nation's electricity.

To protect the public should a commercial nuclear power plant accidentally release radiation to the environment, the Nuclear Regulatory Commission (NRC) requires the plant owner/operator to prepare for NRC's approval a radiological emergency preparedness plan. This on-site plan describes what is to be done in an emergency, how it is to be done, and who is to do it. Among other things, the plan identifies the process for notifying and communicating with the operator's own personnel as well as with federal, state, and local agencies and the media during an emergency. The plan also identifies the circumstances and the actions—such as evacuating the local population—the plant owner would recommend that off-site officials take to protect the public. NRC conducts inspections to ensure that the plant owner can effectively implement the on-site plan. In addition, the Federal Emergency Management Agency (FEMA) is responsible for ensuring that state and local communities develop emergency preparedness plans to address the off-site effects of a radiological emergency. FEMA oversees the conduct of periodic exercises to determine whether the off-site response would adequately protect public health and safety.

My testimony today is grounded in a report we issued in July 2001 to the Chairman of the House Committee on Government Reform and to Representatives Gilman, Kelly, and Lowey on emergency preparedness at the Indian Point 2 plant in New York State.<sup>1</sup> The Indian Point facility is located within the Village of Buchanan in upper Westchester County, approximately 24 miles north of New York City along the east bank of the Hudson River. About 300,000 people live within 10 miles of the plant and millions more live in New York City and within 50 miles in Connecticut, New Jersey, New York, and Pennsylvania. Concerns that nuclear power plants may be targets for terrorists and Indian Point's close proximity to these large populations have increased public interest in the adequacy of the plant's security and emergency preparedness—leading some to call for closing the plant. A draft report (the Witt report) commissioned by the Governor of New York questions the adequacy of emergency preparedness at Indian Point and raises broader issues about emergency preparedness at other nuclear power plants.<sup>2</sup>

In my testimony today, I will discuss the (1) findings and recommendations of our 2001 report on emergency preparedness at the Indian Point 2 plant and (2) subsequent progress made by the plant, NRC, and FEMA in addressing problems noted in our report. You also asked for our thoughts on the findings of the draft Witt report and its potential implications for emergency planning at other facilities. To follow up on the progress made to address the problems we identified in 2001, we reviewed relevant NRC inspection reports prepared since our 2001 report and held discussions with officials of NRC, FEMA, and the four counties responsible for emergency preparedness in the surrounding areas. We did not conduct a comprehensive update of emergency preparedness at the Indian Point 2 plant nor verify the accuracy of the draft Witt report's findings and conclusions. We should also note that, since our 2001 report, the Entergy Corporation has assumed ownership of the facility from the Consolidated Edison Company of New York.

---

<sup>1</sup> *NUCLEAR REGULATION: Progress Made in Emergency Preparedness at Indian Point 2, but Additional Improvements Needed*, GAO-01-605 (Washington, D.C., July 30, 2001).

<sup>2</sup> James Lee Witt Associates, LLC, *Review of Emergency Preparedness at Indian Point and Millstone* [Draft] (Washington, D.C., Jan. 10, 2003). The Witt report was commissioned by Governor Pataki to be a comprehensive and independent review of emergency preparedness in the areas around Indian Point and for that portion of New York State in proximity to the Millstone nuclear power plant in Connecticut.

In summary:

- In 2001, we reported that, over the years, NRC had identified a number of emergency preparedness weaknesses at Indian Point 2 that had gone largely uncorrected. For example, in 1998 and again in 1999, NRC identified several communication weaknesses, including delays in activating the pagers used to alert the plant's staff about an emergency. Consolidated Edison had some corrective actions under way before a February 2000 event raised the possibility that radioactively contaminated water would leak into the environment.<sup>3</sup> Consolidated Edison initiated other actions to address problems that occurred during this event. However, according to an April 2001 NRC inspection report, the actions were not fully effective. In evaluating Consolidated Edison's response to the February 2000 event, NRC found that critical emergency response personnel were not notified in a timely manner, which delayed the staffing and operation of the on-site emergency response facility. According to NRC, this delay occurred because the process to activate the pagers was complex and not well understood and Consolidated Edison had responded to the earlier problems identified without diagnosing their underlying causes. As a result, NRC found emergency preparedness problems similar to those it had identified before and during the event. Despite these weaknesses, NRC, in commenting on a draft of our report, expressed its view that Consolidated Edison's emergency preparedness program could protect the public.

We reported in 2001 that the four New York counties responsible for responding to a radiological emergency at Indian Point 2 had strengthened their emergency preparedness programs as a result of the lessons learned from the February 2000 event. These lessons included the need for better coordination and communications (1) between the counties in responding to a radiological

---

<sup>3</sup> In February 2000, a tube ruptured in a steam generator and Consolidated Edison temporarily shut down the plant because of the possibility that radioactively contaminated water could leak into the environment. According to Consolidated Edison and NRC, the total amount of radioactivity released posed no threat.

emergency and in providing the media with information and (2) between Consolidated Edison and the counties about the emergency and its potential impact on the public. We reported that Consolidated Edison had not clearly communicated with the state and counties about whether a radioactive release had occurred and, if so, its magnitude. Consolidated Edison reported that a release had occurred but posed no threat to the public, while county officials reported that no release had occurred. This contradictory information led to credibility problems with the media and the public. Consolidated Edison, the state, and the counties revised the plant's radiological emergency data form to more clearly show whether a release had occurred.

As we also reported, county officials suggested changes to improve communications among NRC, FEMA, and nonstate entities. In particular, county officials said that since they are responsible for radiological emergency preparedness for Indian Point 2, NRC and FEMA should communicate directly with them during nonemergency situations. In New York and 16 other states—where more than half of the nation's operating nuclear power plants are located—counties or other local governments are responsible for radiological preparedness, but NRC and FEMA communicated primarily with the states and relied on the states to communicate with local jurisdictions. In response, NRC said that meeting with local officials would require considerable resources, and FEMA said that some states limit its communications with local officials. However, NRC had not assessed the costs and benefits of routinely meeting with local officials, and FEMA's method of communicating with the states had not effectively provided the four counties with information on various initiatives that would affect their programs. Since effective communication is critical to prepare for and respond to a radiological emergency, we therefore recommended that NRC and FEMA reassess their policies for communicating primarily with the state in those instances where other entities have a major role for responding to a radiological emergency.

- Since our 2001 report, NRC inspection reports have continued to show emergency preparedness weaknesses. For example, NRC reported that, during an emergency exercise in the fall of 2002, the facility gave out unclear information about the release of radioactive materials, as it did during the February 2000 event. Similarly, in terms of NRC and FEMA communicating with the surrounding jurisdictions, little has changed, according to county officials. County officials told us that a videoconference system—promised to ensure prompt meetings and better communication between the plant's technical representatives and the counties—had not been installed. During the February 2000 event, these representatives had arrived late at the counties' emergency operations centers. NRC officials said that they meet with state officials concerning emergency preparedness and have instituted various initiatives to improve public communication, in which local officials can participate. FEMA officials told us that it would continue to work with state and local governments on emergency preparedness.
- The draft Witt report is a much larger, more technical assessment than our 2001 report. While both reports talk to difficulties in communications and planning inadequacies, the draft Witt report concludes that the current radiological response system and capabilities are not adequate to protect the public from an unacceptable dose of radiation in the event of a release from Indian Point, especially if the release is faster or larger than the release for which the programs are typically designed. We are aware that, in commenting on the draft of the Witt report, FEMA disagreed with some of the issues raised but said that the report does highlight several issues worth considering in order to improve preparedness levels in the communities around Indian Point and nationwide. NRC concluded that the report gives "undue weight" to the impact of a terrorist attack. The agency said that it saw no difference between emergency plans for releases caused by terrorist acts and those caused by equipment malfunctions.

**Background**

Emergency plans for commercial nuclear power plants are intended to protect public health and safety whenever plant accidents cause radiation to be released to the environment. Since the 1979 accident at the Three Mile Island nuclear power plant, significantly more attention has been focused on emergency preparedness. For example, the NRC Authorization Act for fiscal year 1980 established a requirement for off-site emergency planning around nuclear power plants and allowed NRC to issue a nuclear plant operating license only if it determines that there is either a

- related state or local emergency preparedness plan that provides for responding to accidents at the specific plant and complies with NRC's emergency planning guidelines or
- state, local, or facility plan that provides reasonable assurance that public health and safety are not endangered by the plants' operation in the absence of a related state or local emergency preparedness plan.

In November 1980, NRC and FEMA published regulations that provided the criteria for radiological emergency plans. The regulations include emergency standards for on- and off-site safety and require that emergency plans be prepared to cover the population within a 10-mile radius of a commercial nuclear power plant. In addition, state plans must address measures necessary to deal with the potential for the ingestion of radioactively contaminated foods and water within a 50-mile radius. NRC and FEMA have supplemented the criteria several times since 1980. For example in July 1996, the agencies endorsed the prompt evacuation of the public within a 2-mile radius and about 5 miles downwind of the plant, rather than sheltering the public, in the event of a severe accident.

FEMA and the affected state and local governments within the 10-mile emergency planning zone conduct exercises at least every 2 years at each nuclear power plant site. In addition, each state with a nuclear power plant must conduct an exercise within the 50-mile zone at least every 6 years. The exercises are to test the integrated capabilities of

appropriate state and local government agencies, facility emergency personnel, and others to verify their capability to mobilize and respond if an accident occurs. Before the exercises, generally, FEMA and state officials not involved in them agree to the accident scenarios and the aspects of emergency preparedness that will be tested. In addition, NRC requires plants to conduct exercises of their on-site plans. According to NRC staff, the plants usually conduct their exercises as part of FEMA's biennial exercises.

Indian Point 2 is one of the 104 commercial nuclear power plants nationwide licensed to operate. The Indian Point site, which is called the Indian Point Energy Center, has one closed and two operating plants. The other operating plant is referred to as Indian Point 3.

**In 2001, We Noted That Indian Point 2 Had Struggled  
to Resolve Emergency Preparedness Weaknesses**

Over the years, Consolidated Edison's efforts to improve emergency preparedness at Indian Point 2 were not completely successful, and the company experienced recurring weaknesses in its program, as we reported in July 2001. The four New York counties surrounding the plant made improvements in their emergency response programs but suggested better communication among NRC, FEMA, and nonstate entities in nonemergency situations.

**Consolidated Edison Acted to Resolve Emergency Preparedness  
Weaknesses, but Its Actions Were Incomplete**

Beginning in 1996, NRC identified numerous weaknesses with the emergency preparedness program at Indian Point 2. NRC found, for example, that Consolidated Edison was not training its emergency response staff in accordance with required procedures, and some individuals had not taken the annual examination and/or participated in a drill or exercise within a 2-year period, as required. In response, Consolidated Edison disciplined the individuals responsible, developed an improved computer-based roster containing the current status of the training requirements for

emergency response personnel, and began a process to distribute training modules to those employees before their qualifications expired.

NRC relied on Consolidated Edison to take corrective actions for other emergency preparedness problems and weaknesses. However, the company did not correct the weaknesses identified. For example, in 1998 and again in 1999, NRC identified problems with activating the pagers used to alert the plant's staff about an emergency, as well as other communication weaknesses. In 1999, NRC concluded that Consolidated Edison lacked the ability to detect and correct problems and determine their causes, resulting in weak oversight of the emergency preparedness program. In response, NRC staff said that they met with the company's managers to specifically discuss and express NRC's concerns.

Similarly, NRC identified emergency preparedness weaknesses when evaluating Indian Point 2's response to the February 2000 event. For example, NRC found that Consolidated Edison did not activate its emergency operations facilities within the required 60 minutes, primarily because of the complex process used to page the emergency response staff. This problem delayed the on-site response. NRC's Office of the Inspector General also identified emergency preparedness issues, including the state's difficulties getting information about the emergency from Consolidated Edison and the fact that English is a second language for many who lived within 10 miles of the plant. The Office of the Inspector General concluded, and NRC agreed, that recurring uncorrected weaknesses at Indian Point 2 had played a role in the company's response during the February 2000 event. However, NRC concluded that Consolidated Edison had taken the necessary steps to protect public health and safety.

Consolidated Edison subsequently evaluated its entire emergency preparedness program to determine the causes of the deficiencies and to develop corrective actions. Consolidated Edison concluded that senior management did not pay sufficient attention to the emergency preparedness program or problems at Indian Point 2 because these problems were not viewed as a high priority warranting close attention and

improvement. As a result, emergency preparedness had relatively low visibility, minimal direction, and inadequate resources. The company also found that (1) the emergency response organization had been stagnant, understaffed, poorly equipped, and consistently ineffective; (2) the emergency manager performed collateral and competing duties; and (3) for a time, a contractor held the manager's position. Furthermore, the professional development and continuing training of the emergency planning staff had been minimal. The company undertook initiatives to address the deficiencies noted.

Despite these initiatives, in April 2001, NRC reported that it had found problems similar to those previously identified at Indian Point 2. NRC again found weaknesses in communication and information dissemination. It also found that the utility's training program had not prevented the recurrence of these issues during on-site drills and that its actions to resolve other weaknesses had not been fully effective. NRC said that Consolidated Edison had identified the major issues in its business plan, which, if properly implemented, should improve emergency preparedness at the plant. In commenting on a draft of our July 2001 report, NRC noted that its April 2001 inspection report concluded that Consolidated Edison's emergency preparedness program would provide reasonable assurance of protecting the public.

The Four Counties Strengthened Their Emergency Preparedness Programs but Suggested Better Communication Among NRC, FEMA, and Nonstate Entities

The need to improve communication between Consolidated Edison and the counties about the extent of the emergency and the potential impact on the public was highlighted during the February 2000 event. At that time, Consolidated Edison reported that a radioactive release had occurred but that it posed no danger to the public. County officials, on the other hand, reported that no release had occurred. This contradictory information led to credibility problems with the media and the public.

Before the emergency, the counties did not have a defined process to determine what information they needed and how they would present the information to the public. At

the time of the February 2000 event, the Radiological Emergency Data Form that Consolidated Edison used to inform local jurisdictions provided for one of three choices about a release of radioactive materials: (1) no release (above technical specification limits), (2) a release to the atmosphere above technical specification limits, and (3) a release to a body of water (above technical specification limits). In April 2000, Consolidated Edison, in partnership with the state and counties, revised the form to ensure that all affected parties were "speaking with one voice" when providing the media and the public with information. The change to the form provided for one of four choices: (1) no release, (2) a release below federally approved operating limits (technical specifications) and whether it was to the atmosphere or to water, (3) a release above federally approved operating limits and whether to the atmosphere or to water, and (4) an unmonitored release requiring evaluation.

The counties had also taken some other actions to improve their radiological emergency programs. For example, all four counties agreed to activate their emergency operation centers at the "alert" level (the second lowest of four NRC classifications). Before the February 2000 event, the counties differed on when they would activate their centers, with one county activating its center at the alert level and the other three counties at the site-area emergency level (the next level above an alert). As a result, once the first county activated its center during the event, the media questioned why the other three counties had not done so. The counties also connected the "Executive Hot Line," which linked the state, four counties, and governor, to the emergency operations facility at Indian Point 2 to establish and maintain real-time communications during an emergency.

In addition to these actions, county officials suggested to us in 2001 that other changes to improve communications among NRC, FEMA, and nonstate entities could be taken. In particular, county officials said that since they are responsible for radiological emergency preparedness for Indian Point 2, NRC and FEMA should communicate directly with them during nonemergency situations. Absent these direct communications, the counties were not privy to issues or initiatives that could affect their emergency preparedness programs.

NRC staff tried to meet every 5 years with officials from all states that have operating nuclear power plants. NRC staff told us that they met with some states more frequently and that the requests to meet exceeded the agency's capability. Although NRC's policy was to meet at the state level, its staff believed that local officials had various options for meeting with NRC. For example, local officials could participate in the meetings held at least every 5 years with the states and could interact with NRC staff during public meetings, including those held annually for all plants. Emergency preparedness officials from the four counties around Indian Point 2 said that they did not believe that public meetings were the appropriate forums for government-to-government interactions. Therefore, the counties suggested that NRC should meet with them at least annually. According to NRC staff, routinely communicating with local officials has resource implications and involves tradeoffs with its other efforts, such as maintaining safety and enhancing the effectiveness and efficiency of operations. However, NRC, at the time of our review, had not assessed the costs and benefits of meeting with local officials nor the impact that such meetings might have.

FEMA generally implements its programs through the states and relies on the states to communicate relevant information to local jurisdictions. County officials responsible for emergency preparedness at Indian Point 2 identified instances in which this method of communicating with local jurisdictions had not been effective. For example, both New York State and county officials told us that the February 2000 event identified the need for flexibility in FEMA's off-site exercises. County officials said they responded to the 2000 event as they would have responded during FEMA's exercises, which are conducted to the general emergency level (the highest of NRC's action level classifications). Yet, they noted, the response for an alert like the one that occurred in 2000 is significantly different from the response needed during a general emergency, when a significant amount of radiation would be released from the plant site. State and county officials suggested that it would be more realistic to periodically conduct biennial exercises at the lower alert level, which, they noted (and NRC data confirmed), occur more frequently than a general emergency. In commenting on a draft of our report, FEMA said that the

emergency plans for the four New York counties require them to conduct off-site monitoring and dose calculations at the alert level.

FEMA officials also noted that the agency's regulations allow state and local jurisdictions the flexibility to structure the exercise scenarios to spend more time at the alert level and less at the general emergency level. Nevertheless, county officials who participated in the exercises were not aware of the flexibility allowed by FEMA's regulations, in part because they did not participate in developing the exercise scenarios.

**Emergency Preparedness Weaknesses  
at Indian Point 2 Have Continued**

In reviewing NRC's reports on its on-site inspections and evaluations of the plant's emergency preparedness exercises or drills completed since we issued our 2001 report, we found that the facility's emergency preparedness program has continued to experience problems or weaknesses. For example, NRC reported that, in an emergency exercise conducted last fall, the facility gave out unclear information about the release of radioactive materials, which also happened during the February 2000 event. In addition, NRC reported that several actions to correct previously identified weaknesses had not been completed. For example, NRC noted that the timely and accurate dissemination of information was identified as a weakness in the fall 2002 exercise and had been documented previously in drill critique and condition reports.

In addition, in our 2001 report, we noted that NRC's Office of the Inspector General found that, during the February 2000 event, the Indian Point plant's technical representatives did not arrive on time at the local counties' emergency operations centers. To help address this problem, Consolidated Edison said that it would install a videoconferencing system in the centers to enhance communications between the plant and the off-site officials. According to county officials, the videoconferencing system had not been installed as of February 2003.

With respect to our 2001 recommendation that NRC and FEMA reassess their practices of primarily communicating with state officials during nonemergency situations, federal and local officials indicated that little has changed since our report. NRC officials told us that they did reassess their policy since our report was issued and determined that no changes were needed. According to FEMA officials, the agency will continue to work with state and local officials to carry out its emergency preparedness program but has not made any changes regarding nonemergency communication with state and local officials.

Given this history of inadequate efforts to address weaknesses in Indian Point 2's emergency preparedness program, we continue to believe that both NRC and the plant owner could benefit from being more vigilant in correcting problems as they are identified. In addition to improving the plant's program, a better track record in addressing these problems could go a long way in helping alleviate the heightened concerns in the surrounding communities about the plant's safety and preparedness for an emergency. Similarly, more frequent, direct communication by NRC and FEMA with officials of the surrounding counties could improve local emergency preparedness programs and, in turn, help local officials better communicate with their constituents about the plant's safety and preparedness for an emergency.

**The Witt Report Raises Emergency Preparedness Issues at Indian Point and Other Nuclear Power Plants**

On August 1, 2002, the Governor of New York announced that James Lee Witt Associates would conduct a comprehensive and independent review of emergency preparedness around the Indian Point facility and for that portion of New York State in proximity to the Millstone nuclear power plant in Waterford, Connecticut.<sup>4</sup> According to Witt Associates, the review encompassed many related activities that were designed, when taken together, to shed light on whether the jurisdictions' existing plans and capabilities are sufficient to ensure the safety of the people of the state in the event of an accident at one of the plants, and how the existing plans and capabilities might be improved.

According to Witt Associates, it has considered and incorporated public comments on a January 2003 draft of its report and plans to issue the final report this month.

We have not evaluated the Witt report or verified the accuracy of its findings and conclusions. We did note that the draft report identifies various issues—such as planning inadequacies; expected parental behavior that would compromise school evacuation; difficulties in communications; the use of outdated technologies; problems caused by spontaneous evacuation in a post September 11, 2001, environment; and a limited public education effort—that may warrant consideration at Indian Point and nationwide. The draft Witt report concludes that NRC and FEMA regulations need to be revised and updated. We understand that FEMA agreed, to an extent, in its review of the draft report. According to the agency, the draft report raises a number of issues that should be considered for enhancing the level of preparedness in the communities surrounding the Indian Point facility, such as better public education, more training of off-site responders, and improved emergency communications. In addition, FEMA stated that some of these issues should be evaluated for their applicability nationwide. However, FEMA also said that a number of the issues raised in the draft report were not supported by its own exercise evaluations, plan reviews, and knowledge of the emergency preparedness program. According to NRC, the draft report gives “undue weight” to the impact of a terrorist attack. The agency said that it saw no difference between emergency plans for releases caused by terrorist acts and those caused by equipment malfunctions.

In summary, Mr. Chairman, the post September 11, 2001, environment clearly presents new challenges for NRC and FEMA. While the public has always had considerable interest in the safety of nuclear power plants, the terrorist attacks have brought a level of focus and anxiety that may rival or exceed that caused by the Three Mile Island accident in 1979. NRC and the nuclear industry deserve credit for taking action to strengthen physical security as the result of a changing world, but we are still concerned that, as shown in this hearing today, problems in emergency preparedness remain after being

---

<sup>4</sup> Mr. Witt is a former FEMA Director.

repeatedly identified as needing attention. Mr. Chairman, GAO is currently conducting reviews of physical security at selected nuclear power plants and is looking in-depth at safety issues at the Davis-Besse plant in Ohio. We plan to report the results of our work later this year.

-----  
Mr. Chairman, this concludes our prepared statement. We would be happy to respond to any questions that you or Members of the Subcommittee may have.

**Contacts and Acknowledgments**

For further information about this testimony, please contact me at (202) 512-3841. Raymond Smith, William Fenzel, Kenneth Lightner, William Lanouette, Jill Edelson, Heather Barker, and Addison Ricks also made key contributions to this statement.

(360317)

Mr. SHAYS. Mr. Slobodien. Did I get it right this time? Almost.

Mr. SLOBODIEN. You did, sir.

Mr. SHAYS. Good. It's a good name.

Mr. SLOBODIEN. Thank you, sir.

Chairman Shays, distinguished members, I am Michael Slobodien, director of emergency programs for Entergy Nuclear, Northeast. I'm honored to appear here before you today, and appreciate the opportunity to provide you with this testimony.

I am a board certified health physicist with 33 years of professional experience in radiation safety, industrial hygiene, environmental programs and emergency planning. I have responsibility for the overall program management of Entergy's emergency response activities for the Indian Point Energy Center, the James A. Fitzpatrick Pilgrim and Vermont Yankee Nuclear Power Plants. My offices are in White Plains, NY, and I report to the president of Entergy Nuclear in the Northeast.

Entergy is the second largest operator of nuclear power plants in the United States with 10 operating reactors and it is the largest provider of nuclear power industry license renewal and decommissioning services.

We managed the planning and early implementation of the decommissioning strategy for the Millstone 1 reactor in Waterford, CT, and currently manage the decommissioning of the Maine Yankee reactor in Wiscasset, ME.

Today, I would like to make several points regarding the Indian Point Energy Center and the implications it has for the health and safety of the citizens of New York and the adjacent States of Connecticut and New Jersey. In these remarks, I rely on established science.

A most significant point is that an accident at the Indian Point Plant involving the release of large amounts of radioactivity is extremely unlikely. Even in the event of a terrorist attack of the types we have even on civilian and military targets worldwide—this includes the intentional crash of a large aircraft into our hardened facilities—the design of the Indian Point Nuclear Plant incorporates extensive safety-feature redundancy and physical protection to ensure that the reactors and spent fuel facilities can withstand a wide sphere of accidents, whether caused by human error, mechanical failure, natural disasters, or acts of terrorism.

The plants are in no way dirty bombs. In fact, a nuclear power plant cannot undergo a nuclear explosion. It's a physical impossibility. According to James Kalstrom, former Director of the New York city office of the Federal Bureau of Investigation, who, at the request of Governor George Pataki, performed an exhaustive security study of Indian Point in the wake of the September 2001 terror attacks on this Nation, Indian Point is, "an extremely safe place," and is among the best protected and most secure civilian facilities in the country.

The Nuclear Regulatory Commission has frequently said that Indian Point is the best defended reactor in the country. While it is possible, although extremely unlikely, that there could be a circumstance that could lead to a release of radioactivity to the environment, the distances from Indian Point to New York City, Connecticut, and New Jersey are such that radiation doses would be

lower than levels that could cause acute injury or illness. Any long-term effects would be indistinguishable from normal background levels.

In short, the citizens of Connecticut and New Jersey are not at risk from an accident at Indian Point, including an event that could be caused by terrorists. In the same way, the citizens of New York are not at risk from the three Millstone nuclear reactors in Waterford, CT. These statements that I make are based on extensive worldwide experience in radiation effects gathered since the earliest use of radiation as x-rays discovered by Wilhelm Roentgen in 1895. Since that time, no environmental agent has been studied more extensively than radiation.

Our understanding of radiation's transport in the environment, resulting doses, and consequent health effects is documented in many reputable sources, including the National Academy of Science's Committee on Biological Effects of Ionizing Radiation; the United Nations Scientific Committee on the Effects of Atomic Radiation; the Radiation Effects Research Foundation, which has studied and continues to follow the population in Japan in its response to the radiation exposure since 1945; the World Health Organization and the International Agency for Research on Cancer, just to mention a few.

I've attached in my written statement a bibliography of reports and Internet Web sites that may be beneficial to this committee.

A second key point is the analysis related to accidents and their consequences for Indian Point plants do take into consideration a wide spectrum of causes, as I mentioned before—human error, mechanical failure, natural disasters and indeed terrorism. None of the factors noted above, including a terrorist attack, would lead to a release of radioactivity different from what is already analyzed. And I think it's important that I explain why, because the amount of radioactivity in the nuclear power plant is fixed.

There's a certain inventory. It's unchanging. A terrorist event neither adds to it nor subtracts. But no worse can happen as a result of that. In fact, our emergency plans and those of government are designed to deal with the challenges that might be caused by a terrorist attack and are not dependent on the cause of an accident.

The plans are symptom-based; much as a physician treats a patient who comes into the hospital, based on symptoms, so do we, as emergency planners and responders, deal with symptoms. And our plans are designed to work regardless of the circumstances that could cause release of radioactivity to others.

A third key point is that a release of radioactivity to the environment, regardless of the cause, would move into the air in a plume whose size and shape would be determined by prevailing weather. Plumes tend to be narrow, their concentration decreases rapidly with downwind distance and the effects diminish proportionately to the increase in downwind distance.

Plumes are functions of nature; they are predictable and they are monitored easily. We know that plumes that could come from Indian Point would tend to remain in the Hudson Valley despite the fact that prevailing winds are from east to west. The structure of

the valley itself keeps winds moving generally north to south or south to north in the river valley.

Our knowledge of plumes, coupled with our extensive knowledge of radiation effects, enables experts such as Richard Codell and Sarbeswar Acharaya of the Nuclear Regulatory Commission to conclude that New York City, Connecticut, and New Jersey residents are not at risk from a serious accident at the Indian Point Energy Center.

While it is possible to find nuclear power plant accident analyses that predict dire consequences, such analyses have employed grossly unrealistic or impossible assumptions.

Last, I'd like to take a few moments to speak to the report on emergency preparedness at Indian Point and Millstone issued by James Lee Witt Associates. Entergy noted that the report contains useful insights and recommendations, many of which we had underway prior to the start of the Witt report study.

Two of the areas noted for improvement in this Witt report are public education and outreach. We heartily agree. We believe that all of us here today share in the responsibility to improve the level of education about nuclear power and radiation safety. This is essential to counter the fears inspired by certain advocacy groups, noted by Mr. Witt, that said, "In pursuit of their agenda to close Indian Point, they have misused NRC data presumably to frighten and alarm the public. Misuse of information can lead to behavior that may endanger the public health and safety close."

The fears of the public about nuclear power are largely a result of use of misinformation. This is not limited to Indian Point. This, indeed, as has already been discussed, is a national issue.

We disagree with a number of points in Mr. Witt's report and do not find support for the conclusion that present radiological emergency plans are not adequate to protect public health and safety. But we believe that those plans are capable and have been demonstrated to protect public health and safety in the extremely unlikely event of a serious accident at the Indian Point Energy Center.

They need to be improved, there's no doubt. And we are conscientiously working with the local government and the State of New York to improve those plans.

Entergy is committed to operating all of our nuclear plants with safety as the foremost objective. With that in mind, we engaged a panel of experts, including some of the most respected scientists and engineers in the areas of nuclear engineering reactor safety, risk assessment, health physics, counterterrorism, social psychology, emergency communications, and traffic engineering to advise us as we moved forward with our emergency planning improvement efforts. This panel also provided comments to Mr. Witt on his draft report, and brief curriculum vitae of these experts is attached to the written statement.

Entergy is pleased to provide this testimony, and we are prepared to work with Congress as you work toward improving the Nation's security and emergency preparedness. We invite the members of this committee to visit the Indian Point Energy Center in

Buchanan, NY, to see for yourselves the nature of security and emergency preparedness.

That concludes my remarks. Thank you, gentlemen and Congresswoman Kelly.

Mr. TURNER [presiding]. Thank you.

[The prepared statement of Mr. Slobodien follows:]

**Testimony**  
**Michael J. Slobodien, Certified Health Physicist**  
**Director Emergency Programs**  
**Entergy Nuclear Northeast**

**Before the**  
**Congress of the United States**  
**House of Representatives**  
**Committee on Government Reform**  
**Subcommittee on National Security, Emerging Threats, and**  
**International Relations**

March 10, 2003

- Chairman Shays, Ranking Member Kucinich, and distinguished members of this subcommittee, I am Michael Slobodien, Director of Emergency Programs for Entergy Nuclear Northeast. I am honored to appear before you today and appreciate the opportunity to provide you with this testimony.
- I am a board-certified health physicist with 33 years of professional experience in radiation safety, industrial hygiene, environmental programs, and emergency planning. I have responsibility for the overall program management of Entergy's emergency response activities for the Indian Point Energy Center, James A. FitzPatrick, Pilgrim, and Vermont Yankee nuclear power plants. My offices are in White Plains, New York. I report to Michael Kansler, President of Entergy Nuclear Northeast.
- Entergy is the second largest operator of nuclear power plants in the United States with 10 operating reactors. Entergy is the nation's largest provider of nuclear power industry license renewal and decommissioning services. We managed the planning and early implementation of the decommissioning strategy for the Millstone 1 reactor in Waterford, Connecticut and currently manage the decommissioning of the Maine Yankee reactor in Wiscasset, Maine.

MAR-07-2003 15:55

ENTERGY

202 530 7350 P.03

- Today I would like to make several points regarding the Indian Point Energy Center and the implications it has for the health and safety of the citizens of New York and the adjacent states of Connecticut and New Jersey.
- A most significant point is that an accident at the Indian Point plants involving the release of large amounts of radioactivity is extremely unlikely, even in the event of a terrorist attack of the types we have seen on civilian and military targets world wide. The design of the Indian Point nuclear plants incorporates extensive safety - feature redundancy and physical protection to ensure that the reactors and spent fuel facilities can withstand a wide spectrum of accidents whether caused by human error, mechanical failure, natural disasters, or acts of terrorism. The figures shown here indicate the extremely extensive physical security that protect the radioactive materials at Indian Point.
- According to James Kallstrom, former director of the New York City office of the FBI who, at the request of Governor George Pataki, performed an exhaustive security study of Indian Point in the wake of the September 2001 terrorist attacks on this nation, Indian Point is "an extremely safe place" and is among the best protected and most secure civilian facilities in the country. The Nuclear Regulatory Commission has frequently said that Indian Point is the best-defended reactor in the country.
- While it is possible, although extremely unlikely, that there could be a circumstance that could lead to a release radicactivity into the environment, the distances from Indian Point to New York City, Connecticut and New Jersey are such that radiation doses would be lower than the levels that could cause acute injury or illness. Any long-term health effects would be indistinguishable from normal background levels. In short, the citizens of Connecticut and New Jersey are not at risk from an accident at Indian Point including an event that could be caused by terrorists. In the same way, the citizens of New York are not at risk from the three Millstone nuclear power facilities in Waterford, Connecticut.
- This is based on extensive world-wide experience in radiation effects gathered since the earliest use of radiation discovered by Wilhelm Roentgen in 1895. Since that time, no environmental agent has been studied more extensively than radiation. Our understanding of radiation's transport in the environment, resulting doses, and consequent health effects is documented in many reputable sources including the National Academy of Science committee on Biological Effects of Ionizing Radiation (BEIR), The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), The Radiation Effects Research Foundation (RERF) which has studied and continues to follow the population in Japan's response to radiation exposure since 1945, the World Health Organization (WHO), and the International Agency for Research on Cancer (IARC) just to mention a few. I have attached a bibliography of reports and Internet web site resources to my written statement.
- A second key point is that the analyses related to accidents and their consequences for the Indian Point plants take into consideration a wide spectrum of causes including human error, mechanical failure, natural disaster, and terrorism.
- None of the factors noted above, including a terrorist attack would lead to a release of radioactivity different from what is already analyzed. In fact, our emergency plans and those of government are designed to deal with challenges that might be caused

by a terrorist attack and are not dependent on the cause of an accident. The plans are symptom based and are designed to work regardless of the circumstances that could cause a release of radioactivity to occur.

- A third key point is that a release of radioactivity to the environment, regardless of the cause, would move into the air in a plume whose size and shape would be determined by prevailing weather. Plumes tend to be narrow. Their concentration decreases rapidly with down wind distance, and the effects diminish proportionately to the increase in down wind distance. Plumes are functions of nature, they are predictable, and they are easily monitored. We know that plumes that could come from Indian Point would tend to remain in the Hudson River Valley and that their concentrations diminish rapidly with down wind distance. Our knowledge of plumes coupled with our extensive knowledge of radiation effects enable experts such as Richard Codell and Sarbeswar Acharaya of the Nuclear Regulatory Commission to conclude that New York City, Connecticut and New Jersey residents are not at risk from a serious accident at the Indian Point Energy Center.
- While it is possible to find nuclear power plant accident analyses that predict dire consequences, such analyses have employed grossly unrealistic or impossible assumptions.
- Lastly, I would like to take a few moments to speak to the report on emergency preparedness at Indian Point and Millstone issued by James Lee Witt Associates.
- We noted that the report contains useful insights and recommendations many of which we had under way prior to the start of the Witt study.
- Two of the areas noted for improvement in the Witt report are public education and outreach. We agree and believe that all of us here today share in the responsibility to improve the level of education about nuclear power and radiation safety. This is essential to counter the fears inspired by certain advocacy groups noted by Mr. Witt who "... in pursuit of their agenda to close Indian Point ... have misused NRC data presumably to frighten and alarm the public. Misuse of information can lead to behavior that may endanger the public health and safety." The fears of the public about nuclear power are largely a result of the misuse of information. This is an issue not limited to Indian Point; it is a national issue.
- We disagree with a number of the points in Mr. Witt's report and do not find support for the conclusion that the present radiological emergency plans are not adequate to protect public health and safety. We believe that those plans are capable and have been demonstrated to be able to protect public health and safety in the extremely unlikely event of a serious accident at the Indian Point Energy Center.
- Entergy is committed to operating all of our nuclear power plants with safety as the foremost objective. With that in mind, we engaged a panel of experts including some of the most respected scientists and engineers in the areas of nuclear engineering, reactor safety, risk assessment, health physics, counter terrorism, social psychology, emergency communications, and traffic engineering to advise us as we move forward with our emergency planning improvement efforts. This panel provided comments to Mr. Witt on his draft report. A brief curriculum vitae of these experts is attached for your review.

MAR-07-2003 15:55

ENTERGY

202 530 7350 P.05

Entergy is pleased to be able to present this testimony. We are prepared to work with Congress as you work toward improving the nation's security and emergency preparedness.

Mr. TURNER. Mr. Renz.

Mr. RENZ. Good afternoon, Mr. Chairman, members of the subcommittee. My name is William Renz and I am the director of nuclear protection services and emergency preparedness for Dominion. Dominion is one of the largest electric and gas companies in the United States with a diversified and integrated energy portfolio. In addition to Millstone, we own and operate two other nuclear plants.

Dominion appreciates the opportunity to provide testimony today regarding nuclear security and emergency preparedness. I will summarize my prefiled testimony and also address your specific question about what, if any, progress has been made by FEMA and NRC with respect to the emergency preparedness and security of nuclear power stations.

To better understand the current regulatory oversight of these functions, it is important to remember just how much of an impact the 1979 Three Mile Island accident had on the scope and breadth of nuclear emergency planning. There were many lessons learned and the requirements for nuclear emergency planning were expanded dramatically in the early 1980's.

For more than 20 years, State authorities and local governments within 10 miles of a nuclear power station have worked together with licensees to provide assurance of the health and safety of the general public. For many years, it has been widely recognized that the level of emergency preparedness in communities in and around nuclear power stations is superior to that of other localities.

One of the many changes to the emergency planning requirements was the establishment of a 10-mile emergency planning zone. Planning for implementing protective actions within this 10-mile zone include the ability for offsite response organizations to perform a wide variety of emergency functions, such as an independent accident assessment, radiological monitoring, sample collection, and analysis, capability to promptly notify and communicate to the public, traffic control strategies and provisions for reception centers and congregate care facilities.

Purely from a technical standpoint, a much-improved understanding of how nuclear fuel is affected during a severe accident, generally referred to as the "alternate source term," indicates that the same bases used to determine the size of the 10-mile emergency planning zone would today support a significantly smaller size emergency planning zone. Nonetheless, we do not think that now would be the time to reduce at all the level of emergency planning around nuclear plants.

With respect to security at nuclear facilities before September 11, licensees maintained a very high level of security in that portion of the plant site called the "protected area." The protected area includes the nuclear reactors, safety systems, the power production facilities, and it is isolated from the rest of the overall plant site by means, such as concrete, vehicle barriers, double razor wire fences, defensive positions at various locations internal to or along the perimeter of the protected area, and a highly secured entry point for vehicles and employees who enter the protected area.

The protected area also includes state-of-the-art technology used to detect and assess any attempted unauthorized entry.

Trained and armed responders are positioned to ensure that areas vital to nuclear safety will remain secure.

After the attacks of September 11, this very high level of security within the protected area was further heightened. Additionally, security was expanded to provide an armed responder presence and surveillance capability throughout the overall plant site.

Now, to give you an idea of the impact of this type of expansion, the protected area for Millstone is approximately 53 acres.

The overall plant site is approximately 542 acres, or about 10 times the size of the protected area.

The NRC has issued a series of orders requiring significant increases in the requirements for security. These new NRC requirements are intended not only to fortify a plant site but also to ensure that plans are in place to respond to a terrorist attack.

A great amount of time has been spent on table-topping terrorist attack scenarios and how law enforcement resources would be integrated into such a response. These changes, taken in total, are quite far-reaching and comprehensive.

The attacks of September 11 have also forced licensees to considerably strengthen their relationships with intelligence communities, install countersurveillance measures and work toward the common protection of this critical infrastructure. Examples of these new and forming public private partnerships are provided in my prefilled testimony.

With respect to FEMA and NRC oversight, the existing emergency planning regulatory framework serves as a solid foundation for an increasing level of emergency preparedness due to a higher level of integration with law enforcement agencies and the intelligence community.

While emergency planning regulations have not been directly changed, the regulatory oversight for nuclear emergency preparedness programs certainly has been increased since September 11. It was mentioned earlier that communications with stakeholders do not appear to be significantly improved since September 11. I put to you that we are dealing with a different set of stakeholders.

In the area of nuclear security, NRC continues to raise the level of regulatory oversight. In addition to NRC issuing a series of orders to increase requirements, the Commission is currently considering a significant expansion of the existing design basis threat as discussed earlier.

With respect to the Witt Report, it is unclear to what degree this review took into consideration the new efforts being taken by the industry and all levels of government in the charge of better securing the country's nuclear power stations. Nevertheless, we are in the progress of working with our stakeholders to improve the level of offsite emergency preparedness based on the recommendations provided within the report.

In closing, Mr. Chairman, the existing emergency preparedness regulatory framework and our public-private partnerships in Connecticut provide reasonable assurance of public health and safety. The increased coordination with law enforcement agencies and the

intelligence community has substantially strengthened emergency preparedness programs throughout the industry.

Again, I thank you for this opportunity to address this sub-committee.

Mr. TURNER. Thank you.

[The prepared statement of Mr. Renz follows:]

Testimony Presented

By

**Dominion**

William F. Renz  
Director  
Nuclear Protection Services and Emergency Preparedness

To The

Subcommittee On

National Security, Emerging Threats and International Relations

Committee on Government Reform

U. S. House of Representatives

For The Hearing On

Emerging Threats: Assessing Public Safety and Security Measures  
At Nuclear Power Facilities

March 10, 2003

Good afternoon, Mr. Chairman and Members of the Subcommittee. My name is William Renz and I am the Director of Nuclear Protection Services and Emergency Preparedness for Dominion. I have the responsibility for nuclear security, access authorization, fitness for duty and emergency preparedness for all three of our nuclear power stations.

Dominion appreciates the opportunity to provide testimony to the House Subcommittee on National Security, Emerging Threats and International Relations regarding nuclear power station security and onsite and offsite emergency preparedness as they relate to the draft James Lee Witt Associates report entitled *A Review of Emergency Preparedness at Indian Point and Millstone*. My testimony also will address your specific question about what if any progress has been made by the Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC) with respect to emergency preparedness and security of nuclear power production facilities.

For those of you who may not be familiar with my company, Dominion is one of the largest electric and gas companies in the United States, with a diversified and integrated energy portfolio consisting of about 24,000 megawatts of generation. The company operates three nuclear power stations – the Millstone Power Station in southeastern Connecticut, and the North Anna and Surry Power Stations in Virginia. Electricity from these safe nuclear power plants account for about 25 percent of the power we produce for our customers.

To better understand the current regulatory oversight of these functions, and to provide some context, it may be appropriate to look back briefly at the impetus that shaped nuclear power station emergency planning as we know it today. The 1979 Three Mile Island (TMI) accident near Harrisburg, Pennsylvania, had a profound impact on nuclear emergency preparedness for all nuclear licensees. One of the many lessons learned from a review of the response to the accident at TMI was the need to establish an integrated emergency response capability and, therefore, an integrated emergency planning effort. For more than 20 years, state authorities and local governments within 10 miles of a nuclear power station have worked together with licensees to provide assurance of the health and safety of the general public. A public/private partnership grew out of this joint planning effort and has formed the basis for extremely effective working relationships between the industry and the public safety sector.

Dominion has always believed in participating in a public/private partnership with respect to emergency planning. What I mean by a public/private partnership is the ability of the licensee and local, state and federal emergency responders to work effectively in a coordinated manner so that everyone clearly understands their roles and responsibilities in emergency planning and public protection. This assures that all response organizations will be able to respond in a coordinated manner to protect the health and safety of the public should an emergency occur.

Key to successful integrated emergency planning is an on-going, open dialogue among all stakeholders to improve the level of emergency preparedness. This dialogue, coupled with frequent joint planning and training activities, creates a partnership that promotes a high level of trust between the licensee and offsite response organizations.

This public/private partnership concept that came out of the lessons learned from the TMI accident provides an additional layer of safety to the many monitoring and safety system improvements made to nuclear power stations since the early 1980s. The onsite emergency response capability grew from a little-practiced emergency response staged from the nuclear facility's main control room, to one that staffs five or six emergency response facilities with as many as 100 emergency responders. Nearly 100 initiating conditions (emergency action levels) that would require the classification of an emergency have been established. Included in these are the potential effects of a terrorist attack. Strict requirements for timely notifications of an emergency to offsite authorities have been established. This onsite response includes performing emergency response functions such as accident assessment and mitigation, damage control and repair, radiological consequence assessment and provisions for an effective coordination with federal, state and local response organizations. The onsite response is structured to support fully the actions of the offsite response organizations involved. Indeed, many programs provide for either licensee representation in state or local emergency operation centers, or governmental officials to respond to licensee emergency response facilities.

Following the accident at TMI, the nuclear emergency preparedness requirements for offsite response organizations were expanded dramatically. The two-mile low population zone was expanded to a 10-mile emergency planning zone (EPZ). Planning for implementing protective actions within this 10-mile zone include the ability for the offsite response organizations to perform an independent accident assessment, radiological monitoring, sample collection and analysis, capability to promptly notify the public, traffic control strategies, and provisions for reception centers and congregate care facilities.

Paradoxically speaking, an improved understanding of how a severe accident affects nuclear fuel, generally referred to as the alternate source term, indicates that the same bases used to determine the 10-mile EPZ would today support a significantly smaller sized emergency planning zone. Nonetheless, now would not be the time to reduce the level of emergency planning around nuclear plants.

For many years it has been widely recognized that the level of emergency preparedness in the communities in and around nuclear power stations is superior to that of other localities. This is because of a number of factors, including financial support for emergency planning in localities within the 10-mile zone, investment in emergency mitigation equipment and associated technology, and onsite and offsite training of emergency responders.

These points illustrate that much of the regulatory reform done in the early '80s has essentially given FEMA and the NRC a 'head start' on what was needed to be done to provide for the reasonable assurance of the public's health and safety in this new threat based environment.

With respect to security at nuclear facilities before September 11, 2001, licensees maintained a very high level of security in the portion of the plant site called the protected area. The protected area includes the nuclear reactors and power production facilities and is isolated from the rest of the overall plant site by means such as concrete vehicle barriers, double razor wire fences, defensive positions at various locations internal to, or along the perimeter of the protected area, and a highly secured entry point for vehicles and employees to enter the facility. The protected

area also includes state-of-the-art technology used to detect and assess any attempt by unauthorized persons to make entry. Trained and armed responders are positioned to ensure that areas vital to nuclear safety will remain secured. In addition, licensees maintained regular dialogue with local, state and federal law enforcement agencies as a normal part of station security.

After the attacks of September 11, 2001, the very high level of security within the protected area was further heightened. Additionally, security was expanded to provide an armed responder presence and surveillance capability throughout the overall plant site, also known as the owner controlled area. To give you an idea of the impact of this, the protected area for Millstone is approximately 53 acres. The owner-controlled area is approximately 542 acres, or ten times the size of the protected area.

The NRC has issued orders requiring significant increases in the requirements for physical security, for the process used to determine access authorization for those allowed to enter a nuclear site unescorted, and for decommissioning reactors. Additional NRC security orders are pending.

These new NRC requirements are intended not only to fortify a plant site but also to ensure that plans are in place to respond to a terrorist attack. A great amount of time has been spent on ‘table topping’ terrorist attack scenarios and how law enforcement resources would be integrated into such a response. Plan and procedural modifications have been made. Corresponding training has been provided.

These changes, taken in total are quite far-reaching and comprehensive.

The attacks of September 11 have also forced licensees to considerably strengthen relationships with the intelligence community, install counter surveillance measures and work toward the common protection of this critical infrastructure.

In many cases, the relationships formed in the integrated emergency planning efforts of the past 20 years were successfully leveraged to improve relationships with law enforcement agencies and the intelligence community. Without regard to NRC or FEMA regulatory oversight, coordination between all levels of government and industry pertaining to intelligence gathering and threat assessment activities has been nothing short of extraordinary. Active participation in homeland security planning activities has also become part of our process moving forward. Examples of these new and forming public/private partnerships include the following:

- Dominion now sits on the Critical Infrastructure Sub-panel on Virginia Gov. Mark Warner’s *Secure Virginia Initiative* and works closely with other companies and industries and with all levels of government in an effort to improve the security of critical infrastructures within the Commonwealth. This includes the development of homeland security strategies as they relate to critical infrastructures.
- The National Capital Response Squad of the FBI’s Washington Field Office recently came to the North Anna Power Station in Virginia and attended a six-hour training session designed

to familiarize the team with our security program. Without a doubt, that team left the site with a much higher appreciation for the level of security at North Anna and for the level of security throughout the nuclear industry.

- Training exercises prompting a response to a security-related event have been conducted. On July 11, 2002, an exercise conducted at the Millstone Power Station provided an integrated training opportunity for the Millstone emergency response organization to coordinate with the Connecticut Office of Emergency Management; the Connecticut Department of Environmental Protection; the Connecticut State Police Emergency Services' bomb squad unit; the Connecticut Department of Transportation; the National Guard, the Waterford Police Department, and the Federal Bureau of Investigation.
- We participate in monthly Connecticut state and local law enforcement planning and strategy meetings regarding Millstone security and emergency planning. We participate in quarterly emergency planning zone Connecticut and New York community Emergency Management Director meetings. We participate in periodic Connecticut, New York and Rhode Island state emergency management meetings. We take full advantage of these as well as a number of other scheduled and unscheduled opportunities, throughout all levels of the Millstone team to continue the process of joint continuous improvement between the States of Connecticut, New York and Millstone Station in face-to-face settings.

With respect to FEMA and NRC oversight, the existing emergency planning regulatory framework in place enables the company and offsite response organizations to continue to assure public health and safety around nuclear power plants. This framework serves as a solid foundation for an increasing level of emergency preparedness due to a higher level of integration with law enforcement agencies and intelligence assessment functions. While emergency planning regulations have not directly been changed, the regulatory oversight for nuclear emergency preparedness programs has certainly been increased since September 11, 2001.

In the area of nuclear security, the NRC continues to raise the level of regulatory oversight. In addition to NRC issuing a series of orders to increase requirements, the NRC is currently considering a significant expansion of the existing design basis threat and the corresponding adversary characteristics. NRC efforts, while well intended, appear to be looking for the industry to compensate for the federal government's responsibility to defend against an enemy of the state. We believe that any change to the existing design basis threat should be coordinated with the President's recently issued plan for homeland security. It should also recognize the substantial security measures already in place at nuclear plants and take into account the relative vulnerabilities and risks of other elements of our nation's critical infrastructure.

It should be noted that improvements can be made with respect to the integration and timely sharing of intelligence information and the timely sharing of event information. Today, there is no prompt notification process in place to notify licensees of significant information. An advisory alerting us to an upgrade in the national threat level can be issued hours after the upgrade is made effective.

With regard to the Witt report, it is unclear to what degree this review took into consideration the new efforts being taken by the industry and all levels of government in the charge of better securing the country's nuclear power stations. Nevertheless, we are in the process of working with our stakeholders to improve the level of offsite emergency preparedness in Connecticut and Virginia based on the recommendations provided in the report.

In closing, Mr. Chairman, the existing emergency preparedness regulatory framework and our public/private partnerships in Connecticut and Virginia provide reasonable assurance of public health and safety. The increased coordination with law enforcement agencies and the intelligence community has substantially strengthened emergency preparedness programs throughout the industry.

Again, I thank you for this opportunity.

Mr. TURNER. Ms. Howard.

Ms. HOWARD. Thank you. Chairman Shays, members of the committee, thank you. My name is Angelina Howard. I am the executive vice president of the Nuclear Energy Institute.

Congressman Shays, Mrs. Kelly, Mr. Turner, Mr. Tierney, thank you for letting us be here this afternoon.

The focus of my statement is twofold. First, I will address the proven security of our Nation's nuclear power plants. Our industry's security was second to none in the industrial sector prior to September 11, 2001; and our facilities are even safer and more secure today.

Second, I will discuss the industry's emergency preparedness programs, which are really the gold standard worldwide. They have been tested and proven in scores of nonnuclear emergencies for more than 20 years.

Today, we can discuss nuclear power plant security and emergency preparedness plans, because this industry has had these plans in effect since its inception. Although the industry's commitment to these two facets of our business spans more than 2 decades, our vigilance is even more important today to ensure the safety of our work force, the public, and the security of the 103 reactors that provide electricity for one of every five homes and businesses in our country.

Clearly, nuclear power plants are major contributors to regional electricity supplies. Indian Point, for example, produces nearly 2,000 megawatts of electricity, about 20 percent of the electricity that is used in the New York City area.

Critics have said the plants are not needed and closing the plants would raise consumers' electricity bills a marginal amount, \$50 to \$100. We can debate whether the price and how the price could change, but just looking historically at the past 2 years, when on-peak power prices in the New York City area hub have increased substantially, when just one Indian Point reactor was shut down, from 43 percent it went up to 50 percent in the following summer. Shutting down both reactors would have an even greater effect on prices, and it is not likely to be minimal.

Nuclear plant safety and security is based on the philosophy of defense in depth. This includes plant design, construction and operating, as well as exacting Federal security requirements that are met and must be met by all of our nuclear plants in this country.

After September 11, the industry and the NRC conducted independent reviews of how best to improve our already high levels of security. Since then, as Mr. Renz and others have testified, the industry has increased the security force by one-third, to more than 7,000 highly trained, well-armed officers. We have expanded and fortified the perimeter security zones, increased patrols within those zones. We have tightened access to tour plants and strengthened vehicle barriers. Overall, the industry has spent nearly \$400 million on security improvements.

We have conducted in-depth studies of the aircraft analysis and looked at the impact of aircraft on both the containment buildings, spent fuel pools and dry cask storage facilities at these plant sites. We would be pleased to give you a separate briefing on the results of those analyses.

We have also enhanced our frequency and coordination with local and State law enforcement, the intelligence community and the military.

A recently released White House report recommends conducting comprehensive vulnerability and risk assessments of the Nation's critical infrastructure so that resources may be applied to those areas that represent the greatest risk. The nuclear energy industry supports such a recommendation and encourages the Nuclear Regulatory Commission to coordinate its review of nuclear plant security with the Department of Homeland Security.

Daily operation of nuclear energy facilities is based on an integrated approach to protect public health and safety. This includes programs to respond to any emergency, whether an operational event or the response to a potential terrorist attack. As with security, the plant safety begins with its design. Safety features are built into the plant. Several separate steel and concrete barriers protect the reactor. Highly trained, federally licensed reactor operators are responsible for safe operations on a daily basis, and they are an integral part of the facility's emergency response plan.

Emergency exercises and drills test emergency response capabilities, both at the plant and in nearby towns. The industry, State, and local governments participate in these exercises, which are evaluated by the Nuclear Regulatory Commission and the Federal Emergency Management Agency.

We know that the emergency response programs work, because they have been used to evacuate residents both during natural disasters like hurricanes and floods or in other nonnuclear industrial accidents.

You asked for comments on the Witt Report. The Witt Report on Indian Point and Millstone's emergency preparedness is now final. While we still would take issue with the overall conclusions in the report, I note the report acknowledges that the two plants' emergency plans comply with Federal requirements. The report just takes issue with those requirements.

So if Federal agencies pursue additional review of emergency preparedness of nuclear facilities as part of a national infrastructure protection, this industry will willingly and gladly participate in that review. The nuclear industry is constantly reviewing, drilling, and improving its emergency preparedness plans; and we will, as a matter of course, consider further improvements as our efforts in this area continue.

In conclusion, security and emergency preparedness, just like safe operation, are fundamental components of a thriving nuclear energy industry; and in all three areas we have an exemplary record. As America's consideration of energy security and national security grow more and more urgent, we must continue to rely on reliable, affordable, clean energy, generated at our Nation's 103 nuclear power plants in Connecticut, Ohio, and across the Nation.

Thank you.

Mr. TURNER. Thank you.

[The prepared statement of Ms. Howard follows:]



## TESTIMONY

ANGELINA S. HOWARD  
EXECUTIVE VICE PRESIDENT  
NUCLEAR ENERGY INSTITUTE (NEI)

BEFORE THE  
NATIONAL SECURITY, EMERGING THREATS  
AND INTERNATIONAL RELATIONS SUBCOMMITTEE

COMMITTEE ON GOVERNMENT REFORM  
U.S. HOUSE OF REPRESENTATIVES

MARCH 10, 2003

Chairman Christopher Shays, Ranking Member Dennis Kucinich, and distinguished members of the subcommittee, I am Angie Howard, executive vice president at the Nuclear Energy Institute (NEI). I am honored to address the issues before this subcommittee today. I will discuss the steps our industry has taken to build on its already proven security measures, and I also will review the industry's well-developed emergency preparedness programs.

The Nuclear Energy Institute is responsible for developing policy for the U.S. nuclear industry. NEI's 270 corporate and other members represent a broad spectrum of interests, including every U.S. electric company that operates a nuclear power plant. NEI's membership also includes nuclear fuel cycle companies, suppliers, engineering and consulting firms, national research laboratories, manufacturers of radiopharmaceuticals, universities, labor unions and law firms.

Nuclear energy already is a vital part of our nation's diverse energy portfolio, producing electricity—safely and cleanly—for one of every five U.S. homes and businesses. A comprehensive energy policy must ensure an affordable, reliable supply of energy, and nuclear energy provides one of the solutions to several policy challenges facing our nation.

**NUCLEAR POWER PLANTS ARE KEY TO ENERGY SECURITY AND CLEAN AIR**

Given our nation's confrontation with Iraq, this is an important time to consider the importance of nuclear energy to our nation's energy security. One of the most significant ways that our nation responded to the oil embargoes of the 1970s was by rebalancing our energy supply portfolio. The U.S. energy sector reduced its dependence on oil-fired power by increasing reliance on domestic sources, such as coal and nuclear energy.

To underscore this point, nuclear energy provided just 4 percent of U.S. electricity supply before the oil shocks of the 1970s, and oil fueled about 20 percent of electricity production. Today, the situation is reversed, with nuclear energy serving as a workhorse of the electricity sector and oil all but phased out of use for generating electricity. The United States remains the world leader in nuclear energy, with 103 reactors generating an estimated record 778 billion kilowatt-hours of electricity in 2002—more than *all* of the electricity used in Great Britain and France combined. Our 103 reactors are about one-fourth of the world's total.

Nuclear energy is the only large source of electricity that is both emission-free and readily expandable. The industry's exemplary safety record, outstanding reliability, low operating costs and future price stability make nuclear energy a vital source of power today and for the future. Nuclear energy accounts for three-fourths of all U.S. emission-free electricity generation and is, without question, a vital component of our nation's clean air policy.

Nuclear energy already has made a staggering contribution toward reducing harmful emissions to the atmosphere. Between 1973 and 2001, U.S. nuclear power plants avoided the emission of 70.3 million tons of sulfur dioxide, and 35.6 million tons of nitrogen oxide, compared to fuels that otherwise would have produced electricity. In 2001 alone, nuclear plants avoided the emission of 4 million tons of sulfur dioxide, about 2 million tons of nitrogen oxide and 176.8 million metric tons of carbon.

Given that many areas in New York and Connecticut are in non-attainment regarding air quality, nuclear energy's importance to the region is even more apparent. Energy Secretary Spencer Abraham recently said of nuclear energy, "It's obvious to me that an energy source capable of supplying a significant proportion of the world's power with no greenhouse gas emissions should be at the center of the debate." In New York state, Attorney General Eliot Spitzer said that emissions threaten the region's public health and environment if left unchecked.

Nuclear energy must continue to be a significant part of our diverse energy portfolio if we are to enjoy both economic growth and a cleaner environment.

Nuclear energy has long been an engine for economic expansion. It is the most affordable source of baseload power in the United States, with the added advantage of stable forward pricing. Since 1990, nuclear energy has produced—through increased capacity and enhanced power ratings—electricity equivalent to adding 25 1,000-megawatt power plants to our nation's electricity supply. For example, in 1990, nuclear energy produced one-quarter of New York state's electricity, including power for the New York City subway system and other essential services. In 2000, nuclear energy provided 45 percent of Connecticut's electricity. In fact, nuclear

energy has met nearly 27.5 percent of the increased demand for electricity for our entire country over the past decade.

Nuclear energy is equally vital to New York.

The Indian Point Energy Center, which is owned and operated by Entergy, produced nearly 2,000 megawatts of electricity—about 20 percent of the electric power used in the New York City area. Riverkeeper, an organization that has long been dedicated to shutting down the Indian Point facility, recently admitted that, if successful, its efforts to close the plant would raise consumers' electric bills a "marginal" amount "from \$50 to \$100." That is not an insignificant sum.

A study in 2002 by the Public Policy Institute, the research affiliate of the Business Council of New York State, concluded that the state must add at least a dozen new power plants with at least 9,200 megawatts of generating capacity by 2007 to avoid the risk of serious economic damage from power shortages. The New York Independent System Operator, which is responsible for assuring reliable supplies of electricity for the state, said that New York City alone will need as much as 3,000 megawatts of new generating capacity by 2005. These projections assume continued operation of both reactors at the Indian Point Energy Center.

If Indian Point were closed, industry estimates show that the electricity reserve margins for New York would be dangerously low, and consumers could be expected to pay an additional \$3.5 billion for electricity over a three-and-one-half-year period. Much of the price increase would fall on New York City's lower-income residents—those that can least afford it.

The costs to business from interrupted power supplies would be incalculable if Indian Point Energy Center is closed prematurely," the Business Council said in testimony two weeks ago before the New York City Council. "We need only look at California during their power blackouts to find the toll to business—in lost production, damaged equipment and effect on employees—is unacceptable." In addition, the council testified that importing 2,000 megawatts of power from out of state is not feasible given transmission constraints that limit the amount of electricity that can be imported into southeastern New York. "It is also a fallacy that we could conserve enough power to make up for Indian Point's loss of almost 2,000 megawatts in a single momentary instance."

**NUCLEAR PLANTS HAVE THE BEST INDUSTRIAL SECURITY IN THE NATION**

As our nation's considerations of energy security and national security grow more urgent, we cannot afford to proceed on either front without considering the broad benefits of nuclear energy. The industry recognizes, however, that the health, economic and national security considerations associated with nuclear energy easily could be overruled if our plants are not operated safely. The industry has proven over four decades that nuclear power plants can be operated safely. In addition to world-class safety, nuclear power plants meet exacting federal requirements for security and emergency preparedness.

Our nuclear plants were built to withstand certain natural events, such as earthquakes and hurricanes, and the Nuclear Regulatory Commission (NRC) has for more than 20 years required that private security forces defend against an attacking force of saboteurs intent on causing a release of radiation. However, the events of Sept. 11, 2001, caused us to reconsider and to improve.

In analyzing this changed world, the nuclear industry started with the firm knowledge that nuclear power plants—although robust and difficult targets to penetrate—nonetheless are said by some organizations to be potential terrorist targets because of public concern over possible radiation releases. However, as stated by NRC Chairman Richard Meserve:

It should be recognized that nuclear power plants are massive structures with thick exterior walls and interior barriers of reinforced concrete. The plants are designed to withstand tornadoes, hurricanes, fires, floods, and earthquakes. As a result, the structures inherently afford a measure of protection against deliberate aircraft impacts. In addition, the defense-in-depth philosophy used in nuclear facility design means that plants have redundant and separated systems in order to ensure safety. That is, active components, such as pumps, have backups as part of the basic design philosophy. This provides a capability to respond to a variety of events, including aircraft attack.

As Chairman Meserve noted, the industry's defense-in-depth philosophy includes protection by well-trained, heavily armed security officers, fortified perimeters and sophisticated detection systems. We also assume that potential attackers may attempt to achieve the help of a sympathetic insider, so the companies that operate nuclear plants conduct extensive background checks before hiring employees. Even so, to be conservative, our security plans assume that attackers are successful in obtaining insider help. I have attached an NEI publication entitled "Nuclear Plant Security," which explains in more detail the many security measures in place at nuclear power plants.

**SECURITY INCREASED SINCE SEPT. 11, 2001**

Before Sept. 11, nuclear power plants were—without question—our nation's most secure industrial facilities. But the industry and the NRC recognized that our prior defenses were not enough, and our security has been greatly bolstered. On Sept. 11, the nation's nuclear power plants were placed on, and have remained at, a heightened level of alert. We increased security forces at the plants by one-third, to some 7,000 officers at 67 sites. Overall, the industry has invested more than \$370 million in security-related improvements since September 2001.

A copy of an NEI publication entitled "Post-Sept. 11 Improvements in Nuclear Plant Security Set U.S. Industry Standard" is attached. It provides additional detail regarding the many security changes that have been made at our plants since September 2001.

The nuclear industry has cooperated and worked with the NRC to completely review nuclear plant security, and many improvements have been implemented as a result. Changes include measures to provide additional protection against vehicle bombs, as well as additional protective measures against water- and land-based assaults. The industry has increased security patrols, augmented security forces, added more security posts, increased vehicle standoff distances, tightened access controls, and enhanced coordination with state and local law enforcement. The NRC has issued proposed orders that will have the effect of revising the "design basis threat" which—by defining the characteristics of the threat that a plant must defend against—is the foundation for our security programs.

Our defenses were exceptional prior to Sept. 11, and they are even better today. It is unlikely that attackers could successfully breach security at a nuclear power plant and produce a release of radiation that would endanger the residents near the plant. Security at our nuclear power plants is not static. We are constantly reviewing and reevaluating our security programs. In that regard, the industry stands ready to work with this subcommittee to help you and the American public better understand our industry's strong commitment to public safety.

**POLICYMAKERS AND OTHERS PRAISE NUCLEAR PLANT SECURITY**

The nuclear energy industry's security program has been a model for the private sector. In fact, when *The Washington Post* reviewed security in several U.S. private and government sectors last year, a panel of experts gave the nuclear industry a rating of A-/B+—the second-highest rating in the survey.

Members of Congress have been impressed with nuclear power plant security as well. Democratic Whip Steny Hoyer (Md.), after visiting the Calvert Cliffs plant, said, "I believe every step is being taken [with security at Calvert Cliffs] and this facility is safe. ... If there were a threat to this facility, resources would be deployed quickly. Power plant security for me is not academic. My house is 10 miles from here."

After visiting the Perry nuclear power plant, Sen. George Voinovich (R-Ohio) said, "We are increasing our security in Washington, but we could never touch this. I am absolutely overwhelmed by the security they have at this facility. ... If you really look at these facilities, they are the most inspected and looked at in the country." Sen. Bob Graham (D-Fla.), after visiting the St. Lucie nuclear plant, said, "All Floridians can breathe a little easier because of what [the security officers at St. Lucie] are doing."

Iowa Gov. Tom Vilsack, after visiting the Duane Arnold Energy Center, said, "The security here is much more intense than anything I have experienced, that's for sure. A lot of thought has gone into the concept of security, not only to ensure that folks are not exposed to any dangers from the operation of the facility, but just as importantly, making sure that no one can interfere with the operation of the facility. ... [Duane Arnold] is one of the safest of its kind in the country. *The security measures at this facility are extraordinarily impressive*" (emphasis added). South Carolina Gov. Jim Hodges said, "I am quite impressed [with security at the Oconee nuclear power plant]. *This is an incredibly safe place. This spot's a fortress—you couldn't get to it to do any damage*" (emphasis added).

The subcommittee also should consider the findings of a two-day national security simulation conducted by the Center for Strategic and International Studies (CSIS), which examined the vulnerability of the nation's energy facilities.

CSIS said last October that nuclear power plants are "probably our best-defended" industrial facilities against a terrorist attack on the critical infrastructure of the United States. CSIS came to this conclusion after Silent Vector, a two-day national-security simulation exercise in which nuclear power plants were among a list of seven facilities identified as potential targets for possible attacks by air, ground and sea. CSIS President and Chief Executive Officer John Hamre, a former deputy defense secretary, said at a news conference that the nuclear industry "has taken security pretty seriously for a long, long time." Hamre also singled out nuclear power plants for their established communications channels with federal, state and local officials.

NEI is certainly aware of public concerns regarding aviation attacks and, early in 2002, requested that EPRI—a non-profit energy research consortium—conduct an analysis of whether nuclear power plant structures could withstand intentional

aircraft impacts, like those of Sept. 11. Aircraft impact issues have been addressed in the licensing process for all 103 operating reactors, but those evaluations were conducted on the basis that the crash would be accidental. EPRI's independent study was conducted by experts in impact analysis related to commercial and military applications. Their results were in-line peer reviewed by an expert in the dynamic analysis of structures and a renowned structural analyst.

The EPRI study found nuclear power plant containment buildings and used fuel storage pools would protect reactor fuel even if the structures were struck by a fully loaded Boeing 767-400 flying at approximately the same speed as the airplane that crashed into the Pentagon. The study also found that such an impact would not breach the used fuel storage containers used at many plants to store used nuclear fuel outside a used fuel pool. Such a crash certainly would cause a significant amount of collateral plant damage, and no doubt would shut down the plant. However, the EPRI study concluded that such an event would not cause a release of radiation because it would not result in a breach of reactor containment, nor would it cause the spent fuel pool to lose cooling water that shields the fuel from the environment.

The Bush administration recently released a report entitled "The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets" and we urge the committee to consider its findings and recommendations. The report states:

Nuclear power represents about 20 percent of our nation's electrical generation capacity. The U.S. has [103] commercial nuclear reactors in 31 states. For 25 years, federal regulations have required that these facilities maintain rigorous security programs to withstand an attack of specified adversary strength and capability. Nuclear power plants are also among the most physically hardened structures in the country, designed to withstand extreme events such as hurricanes, tornadoes and earthquakes. Their reinforced engineering design provides inherent protection through such features as robust containment buildings, redundant safety systems, and sheltered spent fuel storage facilities.

The security at nuclear power plants has been enhanced significantly in the aftermath of the Sept. 11 attacks. All plants remain at heightened states of readiness, and specific measures have been implemented to enhance physical security and to prevent and mitigate the effects of a deliberate release of radioactive materials. Steps have been taken to enhance surveillance, provide for more restricted site access, and improve coordination with law enforcement and military authorities. In addition, all nuclear power plants have robust security and emergency response plans in place to further assure public health and safety in the unlikely event of a malicious act and/or radioactive release.

The White House strategy recommends conducting comprehensive vulnerability and risk assessments of the nation's critical infrastructure so security resources can be used in the areas that pose the most risk to public health and safety. The nuclear industry's security capability meets all federal requirements, and we support the White House's recommendation to assess the next steps in determining where federal security resources are most appropriately deployed. The NRC should coordinate its review of nuclear plant security with the Department of Homeland Security so decisions on federal resource allocation are made considering all sectors of the critical infrastructure. Risk assessments clearly show that nuclear power plants do not pose a public health and safety risk, even in the event of a terrorist attack.

#### **PROVEN EMERGENCY PLANS INTEGRAL TO PLANT OPERATIONS**

Emergency preparedness has been an integral part of our daily operations and is an important component of our defense-in-depth philosophy. The nuclear industry's emergency preparedness programs, like our overall security programs, are the gold standard worldwide, tested and proven for more than 20 years in response to natural disasters and non-nuclear events. Federal law has required nuclear power plants to develop and maintain sophisticated emergency response plans since 1980. These plans are approved by the NRC and are coordinated with the Federal Emergency Management Agency (FEMA). The industry, along with state and local authorities, tests its emergency preparedness plans in graded exercises every two years. These exercises are observed and graded by the NRC and FEMA to assure compliance with regulatory requirements. For example, the plan at the Indian Point facility was tested, in coordination with the NRC and FEMA, on Sept. 24, 2002, and received a positive evaluation from FEMA, with no deficiencies.

The industry is constantly seeking to improve its plans and has, since Sept. 11, conducted a comprehensive review of the requirements for plant security, including emergency preparedness. A number of improvements in preparedness have been implemented as a result.

To provide the committee with additional information regarding the industry's emergency response programs, a copy of an NEI publication entitled "Emergency Preparedness Near Nuclear Power Plants" is attached. In addition, the committee may be interested in the more detailed testimony of emergency planning expert Donna Miller Hastie, submitted to another congressional committee last year. A copy of her testimony is attached.

**10-MILE AND 50-MILE EMERGENCY PLANNING ZONES**

The 10-mile evacuation zone was determined by a multi-agency task force that included the NRC, FEMA, the Environmental Protection Agency (EPA) and others. The 10-mile zone is considered by most experts to extend far beyond an area where the radiation release would cause an immediate threat to public health. A small portion of residents within the 10-mile emergency planning zone would evacuate in the unlikely event of a reactor accident, but sheltering in place would provide the health and safety benefits for most residents in that area. Unfortunately, those who are seeking to shut the plant prematurely imply that everyone within 50 miles of the plant would need to evacuate. That is simply not true. There are, however, requirements in Entergy's emergency plan for the facility to test water, produce and dairy products within a 50-mile radius of the plant to ensure that these products are safe for public consumption.

Nuclear power plant emergency planning zones (EPZ) consist of two major parts. The first is the plant site itself and a 10-mile radius around the plant. The second is a 50-mile radius of the site that does not require evacuation, but rather is an area where products like agriculture and livestock are monitored.

The 10-mile zone was based on the NRC's conservative analysis showing that there would be little impact on public health beyond the 10-mile radius due to a release of radioactivity from a serious reactor accident. Extensive studies have shown that it is extremely unlikely that radiation exposures to persons within the 10-mile EPZ would exceed the limits established by the EPA—1 rem for whole body dose, compared to an average dose of .36 rem per year from natural and man-made radiation sources, and 5 rem for thyroid dose. These levels are far below the doses for which public health effects would occur and for which long-term health effects, primarily cancer, are known to occur. By comparison, a whole body CT scan, a popular elective medical procedure, results in a dose of 2 rem to the body—twice the dose at which protective action would be taken in the case of a release of radiation from a nuclear power plant. At Three Mile Island in 1979, the highest public whole-body dose was 0.08 rem and the highest thyroid dose was about 0.01 rem—too low to cause any health effects.

The industry and the state and counties within the 10-mile zone develop and regularly exercise comprehensive emergency response plans. In the event of an accident, these plans include gathering data from the nuclear plant and collecting independent data from state, county and federal resources to assess possible exposures to the public from the plant. The participants also evaluate action required to protect the plant workers and the public, including evacuation of persons from some parts of the 10-mile zone and sheltering—that is, staying indoors with doors and windows closed.

The radiation dose to the public in the 10-mile zone is a function of the concentration of the radioactivity in the plume. As the plume expands down wind, the concentration decreases, as does the radiation dose—quickly and significantly.

Extensive knowledge of plume physics enables emergency planners and decision-makers to take prompt actions to protect public health and safety. Because radioactivity released from a nuclear power plant does not move in all directions at once, but travels in a plume that covers a small fraction of the emergency planning zone, it is possible to move out of the plume by traveling a short distance perpendicular to the downwind direction of the plume.

In virtually all cases, the concentration and dose of the plume is reduced so significantly as distance from the plant increases, that there is no reason to take protective actions outside the 10-mile EPZ.

The 50-mile radius ingestion pathway EPZ was established to conservatively encompass an area that would be substantially less affected by releases of radioactivity in the event of a serious accident. The concern in the 50-mile EPZ is dose resulting from direct deposition of radioactivity on the ground, on commercial food crops, on surface water reservoirs, and on land used for grazing of dairy herds and meat sources. The radiation doses that could occur in the 50-mile EPZ following a release of radioactivity at Indian Point are very low—about the same level as a person's typical annual background dose levels. Federal guidance does not include evacuation of this zone because the risk of injury during evacuations themselves would be much greater than the minimal potential health effects from low levels of radiation in this zone.

In the case of Indian Point, there are very few commercial farming activities—vegetable, fruit, dairy, cattle or poultry—with 50 miles north and south of the Hudson River valley. Surface reservoirs of drinking water are to the east and northeast. Thus, under typical meteorological conditions, the low-level radioactivity that might be released from Indian Point would not substantially impact food, milk or drinking water supplies for persons living around the plant.

#### INDUSTRY CONCERNS ABOUT THE WITT REPORT

We are aware that the committee is particularly interested in the findings of a report entitled "Review of Preparedness at Indian Point and Millstone," drafted by James Lee Witt Associates and released on Jan. 10, 2003. We strongly urge the committee to recognize that the Witt report has only been released in draft form. Entergy was not provided a significant amount of time for input to that report. As a result, there are several factual errors in the report that could have been prevented

had the report's authors more extensively reviewed the emergency response plans and detailed implementing procedures currently in place at that facility.

The draft Witt report identified several areas that the industry will review and consider as part of its comprehensive review of security. For example, the report provides recommendations to upgrade equipment, provide training on emergency family protection and improve response times through drills. Other notable issues include notification procedures, the use of probabilistic safety assessments, population reviews and more effective public awareness and education.

However, the Witt report draft also raised many concerns that the industry believes are based on incomplete or inaccurate information. The industry disagrees with several of the key findings of the report. A copy of NEI's Feb. 7, 2003, letter providing industry comments on the Witt report is attached.

I would like to highlight three of our major concerns about statements in the draft report.

Much of the report is based on an assumption that people will not comply with official directions and, as such, evacuation plans for Indian Point do not consider the reality and impacts of a spontaneous evacuation. That assumption is not supported by experience with actual emergency evacuations.

A 1989 industry report provides insights and lessons learned from the analysis of more than 50 large-scale emergencies—both from natural and man-made events—that required the evacuation of up to 300,000 people. The report found that the evacuations proceeded smoothly and safely, even when managed by local response officials without advance preparation and with little or no evacuation training. Although many people may view an evacuation of 300,000 as being irrelevant to the Indian Point area, I urge the subcommittee to consider that the numbers of people that need to consider evacuation due to an accident at that plant have been grossly overestimated.

Second, the industry disagrees with the report's allegations that industry and state and local government emergency plans do not consider the additional ramifications of a radiation release caused by a terrorist and that the plans do not account for the impact of a spontaneous evacuation.

The Witt report ignores recent regulatory and industry actions that address the unlikely potential for a large radiation release resulting from a terrorist attack. Following Sept. 11, the NRC conducted a comprehensive review of nuclear plant security measures and policies and issued new requirements focused in part on emergency preparedness at plant sites in response to the potential for terrorist threats. These new NRC requirements addressed such issues as plant evacuation,

communications with nearby communities, emergency staffing, procedures and plans.

Third, the draft report asserts that emergency preparedness exercises are of limited use in identifying inadequacies and improving emergency response programs. This assertion simply is not supported by actual evacuations and emergency planning drills. Nuclear plant emergency plans—well tested through regular exercises—have proven effective in evacuating residents during natural disasters such as hurricanes and in non-nuclear emergencies such as chemical spills and train derailments. The industry's success in emergency preparedness programs has been measured by exercises that have been critiqued, reviewed and approved by both the NRC and FEMA. The draft Witt report acknowledges that nuclear plant emergency programs are effective in responding to non-nuclear emergencies, yet it does not recognize the role exercises have played in making them so effective.

NRC Chairman Meserve, in a Feb. 12, 2003, letter, also challenged the conclusion of the Witt report in this area. Meserve wrote that emergency response plans, including the one at Indian Point, are designed to cope "with a spectrum of accidents, including those involving rapid, large releases of radiation." This is an important point that counters one of the principal findings of the draft Witt report and is the basis for other criticism of emergency response planning. A copy of Chairman Meserve's letter is attached.

In addition, a copy of a letter from EPRI to Witt Associates, dated Feb. 6, 2003, is attached. Based on its independent analyses of the consequences of potential ground-based terrorist attacks at a nuclear power plant, EPRI said that the risk to public safety from a terrorist attack on a nuclear power plant is very small. This risk is well within the safety standards established by the NRC and far below risks encountered in countless daily activities.

The analyses by EPRI and other independent engineering experts included issues such as the possibility that these terrorist threats could inflict damage on reactor fuel; the possibility and magnitude of radiation releases from a plant's containment building, which houses the reactor; and the possibility of public health consequences due to potential radiation exposures.

In the unlikely event of a radiation release, the EPRI study estimates that the likelihood of one fatality is less than one chance in 600,000 years—50 times lower than the NRC safety standard. The likelihood of one cancer-induced fatality is less than one chance in 300,000 years—1,000 times lower than the NRC safety standard. The long-term cancer fatality risk is indistinguishable compared to cancer fatality risks from other causes.

The low risk results from a combination of several factors: robust physical security and security forces at nuclear power plants; plant design and safety features;

detailed emergency response plans; the capability of federal, state and local agencies to detect, interdict or disrupt an armed attack force. There is a low likelihood of reactor fuel damage due to plant security features, industry capability to detect "insider" activities, and multiple plant safety and shutdown systems that can be activated to stabilize the plant. The strength of the containment building and the radiation removal capabilities of plant systems further reduce the likelihood of a severe radiation release. Even in the unlikely event of significant radiation release, emergency response actions would limit public health consequences.

#### **THE WITT REPORT IS 'FUNDAMENTALLY FLAWED'**

Following the release of the draft report, an independent task force of some of the most widely respected experts in emergency planning critiqued the report's findings. The task force issued a 39-page report on Feb. 7, 2003. Copies of this report will be made available to this subcommittee and are worthy of reading in detail. But the following conclusions by the experts stand out:

- "[The task force] found the draft Witt report to be fundamentally flawed in several important respects, and therefore we do not consider it to be a valid basis, in its current form, for decision making."
- "The draft Witt report's most serious flaw is that it draws conclusions, on matters of great importance, with little apparent basis other than the opinions of its (unnamed) authors. As an example, it asserts that a terrorist-caused radiation release at Indian Point would likely be worse in magnitude and timing than that caused by accidents previously considered in safety and risk assessments of the plant. And, it compounds that error by asserting that the emergency management process does not accommodate the consequences of such terrorist-caused events. Both assertions are presented without reference, basis or explanation—and, in fact, both are incorrect."

It is unfortunate that the draft Witt report is so replete with factual errors and false assumptions, yet is being used by some as the basis for recommending closure of the Indian Point Energy Center. Entergy and state and local officials participated in an exercise of the Indian Point emergency plan last September and FEMA found no deficiencies in the plan during the exercise.

#### **CONCLUSION**

In conclusion, the industry urges Congress to consider security at nuclear power plants in the context of our nation's overall national security and energy security

policy. The industry's long-standing commitment to security and emergency planning makes it the gold standard in the industrial sector, and we are committed to the safety and security of the nation's nuclear power plants. The industry has met all NRC security requirements since Sept. 11, and we continue to coordinate closely with local and state law enforcement agencies, the military and the intelligence community in order to remain vigilant.

NEI is pleased to be able to present this testimony to this subcommittee. The industry is committed to working with Congress to develop policy that enhances and builds on our proven security and emergency preparedness.



## Nuclear Plant Security

*February 2003*

### Key Facts



SUITE 400  
1776 I STREET, NW  
WASHINGTON, DC  
20006-3708  
202.739.8900  
[www.nei.org](http://www.nei.org)

- The defense-in-depth philosophy used in the construction and operation of nuclear power plants protects the public from exposure to radioactive material.
- All commercial nuclear power plants have well-armed and highly trained security forces that are routinely drilled and tested.
- The nuclear energy industry has always had the highest security standards and requirements of any industry. Since Sept. 11, 2001, security has been heightened security still further. The industry has added about 2,000 security officers and upgraded physical security. Overall, the industry has spent \$370 million on additional security since Sept. 11, 2001.
- Access to nuclear power plants is controlled by security officers who search all entering vehicles and people. All workers entering plant operating areas also must pass through sensitive metal and explosive detection equipment.
- Electric companies also have installed additional vehicle barrier systems to protect

against vehicle bombs causing damage to critical plant systems and components.

- The industry, through the Nuclear Regulatory Commission, coordinates with the Department of Homeland Security and intelligence agencies on the assessment of potential threats and the specific actions by industry security forces in the event of a credible threat against a commercial nuclear facility.
- All commercial nuclear plants have emergency response procedures and contingency plans in the event of a plant accident or terrorist event. These procedures are evaluated every two years during extensive drills involving plant personnel and local police, fire and emergency management organizations. NRC and Federal Emergency Management Agency expert teams evaluate these drills.

### Plant Security Meets All Federal Requirements

The nuclear power industry is one of the few industries whose security program is regulated by the federal government. The NRC's requirements for nuclear power plant security are predicated on the

need to protect the public from the possibility of exposure to radioactive releases caused by acts of sabotage. Intelligence information and incidents around the world are analyzed to ensure plant protection regulations are updated to reflect potential threats.

The NRC's security regulations are designed to ensure that the industry's security force can protect against specific ground-based threats. The threat against which the industry must defend is characterized as a suicidal, well-trained paramilitary force, armed with automatic weapons and explosives, and intent on forcing its way into a nuclear power plant to commit radiological sabotage. Such a force may have the assistance of an "insider," who could pass along information and help the attackers. The presumed goal of such an attack would be the release of radioactive material from the plant.

The NRC's "design basis threat" provides a foundation for developing defensive response strategies that cover a variety of situations. The NRC bases the design basis threat on technical studies and information received from intelligence experts and federal law

## Nuclear Plant Security

*Page 2 of 4—February 2003*

enforcement agencies. It is reviewed by the agency twice a year.

Many industry security elements are considered “safeguards” information, which means they are controlled on a “need-to-know” basis. Clearly, plant protection capabilities and response strategy should be controlled and protected from public disclosure to avoid compromises that might benefit a potential adversary.

### Defense-in-Depth Against Potential Threats

The FBI considers security forces and infrastructure at nuclear power plants formidable and considers nuclear power plants difficult to penetrate.

In addition, the defense-in-depth features that protect the public from radiological hazard in the event of a reactor incident also protect the plant's fuel and related safety systems from attempted sabotage. The design of each plant emphasizes the reliability of plant systems, redundancy and diversity of key safety systems, and other safety features to prevent incidents that could pose a threat to public health and safety.

Steel-reinforced concrete containment structures protect the reactor. Redundant safety and reactor shutdown systems have been designed to withstand the impact of earthquakes, hurricanes, tornadoes and floods. Areas of the plant that house the reactor and used reactor

fuel also would withstand the impact of a widebody commercial aircraft, according to peer-reviewed analyses by EPRI, a Palo Alto, Calif.-based research organization. Operations personnel are trained in emergency procedures that would be used to keep the plant safe from a sabotage attempt.

A two-day national security exercise conducted by the Center for Strategic and International Studies in 2002 found that nuclear power plants would be less attractive targets to terrorist organizations because of the industry's robust security program. The exercise was designed to explore difficulties and reveal vulnerabilities that might arise if the nation were faced with a credible, but ambiguous, threat of a terrorist attack on American soil.

“Silent Vector” was developed and produced by CSIS in partnership with the ANSER Institute for Homeland Security and the Oklahoma City National Memorial Institute for the Prevention of Terrorism. Potential targets included refineries, large liquefied natural gas or liquefied petroleum gas storage operations, pipeline infrastructure, petroleum terminals, nuclear power plants, chemical operations, and dams.

CSIS President John Hamre said that nuclear power plants “are probably our best defended targets. There is more security around nuclear power plants than anything else we've got... one of the things that we

have clearly found in this exercise is that this is an industry that has taken security pretty seriously for quite a long time, and its infrastructure, especially against these kinds of terrorist threats, is extremely good.”

David McIntyre, deputy director of the ANSER Institute for Homeland Security, added that “during the eight months of research that went into this, there were some issues like that [communication and coordination] that turned out not to be as great as we thought. And the nuclear industry was one of those that turned out to be much better connected—much more progressive, frankly—than I'd anticipated when we began the research.”

**Site Security Measures.** All commercial nuclear plants have established extensive security measures to thwart intruders. Plant operators and the NRC inspect these measures and test them in drills to uncover any vulnerability. Security measures include:

- physical barriers and illuminated detection zones
- more than 7,000 well-trained and well-equipped armed security officers at 67 sites
- surveillance and patrols of the perimeter fence
- intrusion detection aids (including several types of detection fields, closed-

## Nuclear Plant Security

*Page 3 of 4—February 2003*

circuit television systems and alarm/alert devices)

- bullet-resisting barriers to critical areas
- a dedicated contingency response force.

All threats will be countered with dedicated, tactically trained, well-equipped security officers who collectively determine the nature of a threat, assess its magnitude and take aggressive steps to deter the threat.

**Controlled Access.** Access to the nuclear power plant requires passage through the larger “owner-controlled area.” Since Sept. 11, access to specific parts of the plant is controlled by physical barriers and security officers.

Access to an interior fenced area—the protected area, where the reactor building is located—is controlled by security officers and physical barriers. Vehicle barriers and/or other physical boundaries ensure that the protected area of the plant cannot be breached by a direct vehicular assault or by detonation of a vehicle bomb. All vehicles, personnel and material entering the protected area must first be thoroughly inspected by security officers to ensure that no weapons, explosive or other such items are brought onto the plant site.

Access to the protected area of the plant is controlled through

the use of physical barriers, intrusion detection equipment, closed circuit surveillance equipment, a designated isolation zone and exterior lighting. Access to the inner areas of the plant where vital equipment is located also is controlled through the use of physical barriers, locked and alarmed doors, and card-reader or hand geometry access control systems.

The barriers are substantial enough to effectively delay entry in order for an effective armed response by plant security forces. Within the protected zone, access to all vital areas of the plant is even more secure. This access may be controlled by a security officer or provided by computer-controlled “key-card” access systems. Plant employees must have a documented need prior to gaining access to each vital area and their movements are tracked by key card access points throughout the vital area.

**Reactors Operators Act in Concert With Security.** Reactor operators train frequently to be sure they can respond to a range of unusual events. Plant operators have emergency procedures in place specifically for security situations, including automatic shutdown of the reactor in the event of an attack. Emergency planning and public notification systems support protection of public

health and safety. The NRC periodically evaluates these plans during exercises or drills, which may also involve local

police, fire and emergency management organizations.

### Protecting Against the Insider Threat

All nuclear power plants have programs that reduce the potential for threats from plant personnel, or “insiders.” These include authorization criteria for those allowed unescorted access to the plant’s protected area and “fitness-for-duty” programs to deter drug and alcohol abuse. Strong behavioral observation programs are in place requiring personnel to be trained to observe and handle behavior that may be a potential threat to the normal operation of a nuclear power plant. In addition, many companies provide teamwork development programs that promote commitment and accountability in the workforce.

**Access Authorization.** Before new nuclear plant employees or contractor employees are allowed unescorted access to the protected area, they must pass several tests and background checks to determine whether they are trustworthy and reliable. These tests include drug and alcohol screening, psychological evaluations, plus a check of employment records, education records, criminal histories (through the FBI) and credit histories.

**Fitness-for-Duty Programs.** Companies that operate nuclear power plants demand and ensure that personnel perform their duties in a safe, reliable and trustworthy manner, and

## Nuclear Plant Security

*Page 4 of 4—February 2003*

are not under the influence of legal or illegal substances, or mentally or physically impaired from other causes that would adversely hinder their ability to competently perform their duties. Employees who have unescorted access to the plant's protected area must maintain their fitness-for-duty. The NRC requires companies to conduct random drug and alcohol testing on their employees. As a result, at least half of all employees are tested annually.

**Behavioral Observation.** Employees with unescorted plant access are subject to continual behavioral observation programs. Behavioral observation is conducted by supervisor and management personnel trained in behavioral observation. Behavioral observation is designed to detect individual behavioral changes, which, if left unattended, could lead to acts detrimental to public safety. Employees are offered counseling if they have job performance problems or exhibit unusual behavior. Similarly, anyone who appears to be under the influence of drugs or alcohol is immediately removed from the work area for evaluation.

### **Security Increased Since Sept. 11, 2001**

On Sept. 11, 2001, security at every nuclear power plant was placed on its highest level. Security remains at that level pending a comprehensive security review by the NRC.

As a result, access to the plants is more strictly controlled; the defensive perimeters have been extended and reinforced, and security forces and capabilities have been augmented, and coordination with law enforcement, the intelligence community and the military has been enhanced. At some plants, these efforts have been supplemented by National Guard, U.S. Coast Guard, state police or other forces.

In February 2002, the NRC formalized many of the enhancements to security that the industry had already implemented. The agency recently issued requirements further restricting access authorization and continues to examine issues such as working hours and training for security personnel. As part of its ongoing review of nuclear plant security, the NRC is developing an updated definition of the design basis threat. Working with the NRC, the industry continues to examine ways to refine security at all of our facilities.

*This fact sheet is also available at [www.nei.org](http://www.nei.org), where it is updated periodically.*

**FACT  
SHEET**

## **Post-Sept. 11 Improvements in Nuclear Plant Security Set U.S. Industry Standard**

*February 2003*

### **Key Facts**

- Nuclear plants are the most secure facilities in the U.S. industrial infrastructure.
- The nuclear energy industry, working with the Nuclear Regulatory Commission, has implemented additional security measures at nuclear facilities since Sept. 11, 2001.
- Recent studies and exercises have confirmed that nuclear facilities are well defended and difficult for terrorists to penetrate.

### **Setting the Standard for Industrial Security**

The nuclear industry responded quickly and effectively to the events of Sept. 11. Security at nuclear plants, already the most secure facilities in the U.S. industrial infrastructure, was bolstered and has remained at a heightened level of alert.

Security forces at nuclear plants were increased by 33 percent to approximately 7,000 officers at 67 sites. Overall, the industry has spent an additional \$370 million in security-related improvements since September 2001.

In 2001, the industry averaged \$5 million per site on security-related expenditures. Security expenditures are expected to increase to \$7.3 million per site this year.

The industry, working with the NRC, instituted additional security measures since Sept. 11, such as:

- extending and fortifying security perimeters
- increasing patrols within security zones
- installing new barriers to protect against vehicle bombs
- installing additional high-tech surveillance equipment
- strengthening coordination of security efforts with local, state and federal agencies to integrate approaches among the entities—a position the industry continues to support.

In February 2002, the NRC formalized many of the security enhancements that the industry had implemented since Sept. 11. In addition, the agency recently issued requirements further restricting access at nuclear plants and is reviewing other issues, such

as working hours and training for security personnel.

Working with the NRC, the industry continues to examine ways to improve security at all U.S. nuclear facilities at all levels.

### **Studies Confirm Strength Of Nuclear Plant Security**

A two-day national security exercise conducted by the Center for Strategic and International Studies (CSIS) in 2002 found that nuclear plants would be less attractive than other potential targets to terrorist organizations because of the industry's robust security programs. The exercise was designed to explore difficulties and reveal vulnerabilities that might arise in the event of a credible, but ambiguous, threat of a terrorist attack on American soil.

At the conclusion of the exercise, CSIS President John Hamre said that nuclear power plants "are probably our best defended targets. There is more security around nuclear power plants than anything else we've got."

Peer-reviewed analyses conducted by EPRI revealed that structures that house the reactor



SUITE 400

1776 I STREET, NW  
WASHINGTON, DC  
20006-3708  
202.739.8000  
[www.nei.org](http://www.nei.org)

**Post-Sept. 11 Improvements in Nuclear Plant Security  
Set U.S. Industry Standard**

*Page 2 of 2—February 2003*

and nuclear fuel facilities would be protected against a release of radiation even if struck by a large commercial jetliner.

State-of-the-art computer modeling techniques determined that typical nuclear plant containment structures, used fuel storage pools, fuel storage containers and used fuel transportation containers would withstand these impact forces despite some concrete crushing and bent steel. In all cases, public security would be protected.

*This fact sheet is also available at [www.nei.org](http://www.nei.org), where it is updated periodically.*

*More information on NRC security initiatives since Sept. 11 is available at [www.nrc.gov](http://www.nrc.gov).*



## Emergency Preparedness Near Nuclear Power Plants

January 2003

### Key Facts



SUITE 400  
1776 I STREET, NW  
WASHINGTON, DC  
20006-3708  
202.739.8000  
[www.nei.org](http://www.nei.org)

- Federal law has always required nuclear power plants to develop and exercise sophisticated emergency response plans and ensure that plans exist to protect public health and safety. These plans are approved by the Nuclear Regulatory Commission (NRC) and the state in which the plant is located. Approval of emergency response plans is coordinated between the NRC and the Federal Emergency Management Agency (FEMA). These plans must be approved for the plant to obtain—and retain—an operating license.
- Nuclear facilities are designed, constructed and managed to prevent radioactive releases, even in the event of natural disasters or terrorist acts. The protection of the public is achieved by a variety of measures: the design and safety features built into the plant; the multiple layers of physical barriers that protect the reactor; and highly trained, federally certified professionals who operate the plants safely and know how to respond in emergencies.

- Since 1980, several communities have used nuclear plant emergency plans in response to other types of emergencies, such as chemical spills, fires and storms.
- The emergency response plan must provide protective measures for the community in 10-mile and 50-mile emergency planning zones. These zones were initially determined by the Environmental Protection Agency and the NRC, with input from several federal agencies. FEMA now has the lead role in emergency planning off the nuclear plant site.
- Each nuclear plant site must test its plan biennially in an emergency exercise. The performance of the company's plan is evaluated by the NRC. State and local governments also participate in the exercises. Off-site plans are evaluated by FEMA. If the NRC or FEMA has concerns about the state of emergency preparedness, the NRC could take action against the plant's license.
- In 2001, the NRC revised its emergency planning regulations for nuclear power reactors<sup>1</sup> to provide states the option to use potassium iodide as a secondary protective measure for the public. Potassium iodide would supplement evacuation and sheltering in the unlikely event of a nuclear power reactor accident.
- Following the events of Sept. 11, 2001, the NRC initiated a comprehensive review of requirements for plant security. New requirements focused in part on emergency preparedness at plant sites in response to terrorist threats. Industry, in coordination with the NRC and FEMA, is implementing these measures. The guidelines were refined to address such issues as on-site evacuation, off-site communications, emergency staffing, procedures and plans on the specific context of a terrorist attack.

### Emergency Planning: A Prerequisite to Licensing

In 1980, Congress mandated that every U.S. nuclear power plant develop—and test periodically—a comprehensive emergency response plan. The 1980 NRC Authorization Act

<sup>1</sup> 66 *Federal Register* 5427, dated Jan. 19, 2001

## **Emergency Preparedness Near Nuclear Power Plants**

*Page 2 of 4—January 2003*

strengthened and expanded the emergency preparedness requirements already imposed on nuclear plants.

Emergency response plans have a very broad reach. Local, state and NRC officials are included in the company's plan and participate in periodic exercises to demonstrate the plan's viability. The number of people involved in emergency preparedness at each nuclear power plant totals a few hundred.

Today, no nuclear power plant can operate in the United States without an approved and tested emergency response plan. FEMA must review and provide recommendations to the NRC regarding the adequacy of the emergency response plans of local and state agencies.

**Emergency Response Plans Put to the Test**  
 All U.S. nuclear reactor facilities are required to participate in reviewed, full-scale emergency exercises every two years (and training drills in off years). For each exercise, the utility creates a confidential emergency scenario to be played out by plant staff and local emergency response organizations, including law enforcement, local hospitals, radiological monitoring teams and others. Post-exercise critiques by the federal agencies and exercise participants identify areas that need to be corrected in future exercises or improvements that need to be made to the plan itself.

The NRC also requires plants to conduct training drills in alternate years to test key elements of each plant's response capabilities. These drills may include participation by state and local emergency management officials. Since the drills are not graded, supervised instruction and resolution of the drill scenarios' problems are permitted. Drills are often observed by plant NRC resident inspectors. Lessons learned are incorporated into the emergency response plan.

NRC headquarters and regional staff participate in at least one emergency exercise per year in each of the four regions. The agency's 24-hour-a-day emergency response facility and its response teams—which are trained in resource management, coordination and support, and liaison among federal, state and local officials—are critiqued on their responses to the simulated emergency.

Unannounced drills of various aspects of a plant's response plan are conducted frequently to develop and maintain key skills, including coordination, communications, assessment of emergency medical and fire brigade response, and radiation dose assessment. Each company must also provide initial training and annual retraining of everyone with emergency response duties.

Extensive testing of emergency plans maintains a continued state of readiness, upgrades emergency preparedness based

on lessons learned from drills and exercises, and demonstrates coordination among all parties to ensure a totally integrated and effective response to any emergency.

### **Agencies Set Emergency Planning Zones**

In 1978, the EPA, the NRC and other federal agencies developed the planning basis for a radiological emergency response preparedness program.

The Federal Radiological Preparedness Coordinating Committee—lead by FEMA—uses these planning tools to coordinate all federal responsibilities for assisting state and local governments in radiological emergency planning and preparedness activities.

The multi-agency federal task force determined that a 10-mile radius encompassing a reactor facility is an appropriate emergency planning zone in the event of a release of radioactive material from the reactor. The task force concluded that projected radiation doses as a result of most major reactor accidents would not be a threat to public health and safety beyond the 10-mile zone.

The federal task force concluded that a 50-mile emergency planning zone would be sufficient to safeguard the public from limited exposure as a result of consumption of contaminated water, milk or foods.

In the unlikely event of a serious accident, it likely would

## **Emergency Preparedness Near Nuclear Power Plants**

*Page 3 of 4—January 2003*

evolve over a period of several hours, thus providing time for orderly evacuation or sheltering, if necessary. In the 50-mile emergency planning zones, state agencies monitor radiation levels and protect residents against consumption of possibly contaminated food and water.

Residents within the 10-mile emergency planning zones are provided annually with information explaining radiation and telling them measures to take in the event of an emergency.

### **Highly Coordinated Emergency Response**

In the event of an emergency, the licensed nuclear facility classifies the event, notifies local, state and federal emergency response organizations, and provides protective action recommendations.

Local and state emergency response organizations confirm the severity of the event and determine the protective action guides for residents within 10 miles. These protective actions could be a combination of evacuation, sheltering and, in some cases, the use of potassium iodide tablets.

The local and state authorities also have responsibility for providing information about protective measures to those in the emergency planning zone. These authorities must be able to activate notification systems in about 15 minutes from the

time they learn of a situation requiring action.

Not all nuclear plant events are emergencies. The NRC provides guidelines for classifying incidents at nuclear plants based on their potential severity, ranging from "notification of unusual event" (no emergency-plan activation needed) to "alert," "site area emergency" and "general emergency."

A notification of unusual event, the lowest classification, means that a small event has occurred, but no radiation leak is expected. Local and state officials are notified, but there are no ramifications for the public.

An alert means a small problem has occurred within the plant; officials are notified. Again, there is no effect on the public.

A site area emergency suggests a more serious problem. If necessary, local and state officials will become involved.

A general emergency is the most serious event. In this instance, radiation may leak outside the plant and off-site. Emergency response procedures may be implemented.

However, any type of nuclear plant event is rare. In 2002, the industry recorded 12 notifications of unusual events and four alerts. The most recent site area emergency took place in 1983. No general emergency has taken place since the NRC

established the classification system in 1980.

### **Experience With Emergency Plans**

A 1989 Nuclear Energy Institute study showed that from 1980–1988, the United States experienced 250 emergencies that required the evacuation of more than 1,000 people. None were related to the operation of a nuclear power plant. The emergencies ranged from hurricanes and floods to spills and leaks of toxic chemicals.

Emergency response plans developed by the industry, however, were activated successfully by local officials for use in other emergencies. All the evacuations were performed safely and in an orderly fashion. Two examples:

- The evacuation of 10,000 people from Cedar Rapids, Iowa, in July 1985, following a fire at a city-operated sewage treatment plant that dispersed a black cloud of toxic fumes over the city. State and local officials used a draft plan developed for Alliant Energy's Duane Arnold nuclear plant.
- The evacuation of 17,000 residents of St. Charles Parish, La., following a leak from a nearby chemical plant in December 1982. State and local officials worked from a draft plan for Entergy's Waterford 3 nuclear plant, which was not yet operating.

NEI's 1989 study of evacuations found that communities

## **Emergency Preparedness Near Nuclear Power Plants**

*Page 4 of 4—January 2003*

that had conducted field exercises of emergency plans performed better than communities that had not. The study concluded that there is significant value in testing plans, probably because such tests revealed areas that could be improved as well as familiarized local officials with their emergency response abilities.

### **Industry Commitment To Preparedness**

Emergency preparedness at U.S. nuclear power plants is an integral part of daily operations. A commitment to excellence throughout the industry, coupled with continual training and testing, has produced a high level of preparedness. For example:

- Emergency response plans are constantly upgraded through lessons learned from actual plan activations, as well as repeated drills, exercises and critiques.
- Training programs are conducted annually for all emergency response personnel. Training programs for operators and technical staff who use emergency operating procedures are accredited by the National Nuclear Accrediting Board.
- Much-improved response facilities have been built and existing facilities upgraded to aid effective handling of emergencies.
- Sophisticated plant computer systems have been developed to provide important data for dealing with potential emergencies.
- Advancements in communications technology have improved the ability to notify appropriate plant employees, emergency response personnel and the public if an event were to occur.
- Effective methods have been developed to assess performance in drills and exercises, and to improve emergency preparedness through lessons learned.
- Following the events of Sept. 11, the industry has taken a wide range of steps to assess emergency preparedness programs, including an industry-wide review of management oversight of plant programs and communications approaches, applying lessons learned to strengthen emergency preparedness.

*This fact sheet is also available at [www.nei.org](http://www.nei.org), where it is updated periodically.*

**TESTIMONY**

**BEFORE THE**

**SENATE COMMITTEE**

**ON**

**ENVIRONMENT AND PUBLIC WORKS**

**JUNE 5, 2002**

DONNA J. MILLER HASTIE BS, MS  
EMERGENCY PREPAREDNESS SPECIALIST

Thank you, -Mr. Chairman.

My name is Donna Miller Hastie. My experience in emergency planning includes 23 years in the commercial nuclear power industry in the U.S. and abroad. Before joining the nuclear industry, I supervised a nuclear medicine program in a hospital. During my career, I have served as an evaluator or observer at over 500 emergency preparedness drills and exercises. And, for many years, I have had the pleasure of co-sponsoring and teaching emergency preparedness in a continuing education course at Harvard University. I have also made presentations or taught at MIT, Rutgers, and the Leadership School at Wharton.

My experience includes:

- Manager of the Emergency Preparedness (EP) program for the Beaver Valley Power Plant in Pennsylvania, including onsite emergency response readiness and coordination with offsite state and local emergency response organizations. The 10-mile emergency planning zone (EPZ) for Beaver Valley included three States, three counties, 30 municipalities, three NRC regions, two FEMA regions, and 37 federal agencies that make up the Regional Advisory Council (RAC).
- Program Manager in the emergency preparedness division for the Institute of Nuclear Power Operations (INPO). During my 14 years at INPO, I completed 280 plus plant visits and at the time of my retirement, was manager of the emergency preparedness program for the Institute. I have been to every plant in the United States at least once, many more than once, and many outside the US. INPO's EP program included identifying areas of strengths and recommendations for enhancements for emergency response programs at nuclear power plants.
- Manager of the Emergency Preparedness program at PSEG, (Salem/Hope Creek plants) in New Jersey for five years. The 10-mile EPZ for PSEG included two States, four counties, one NRC region, two FEMA regions, and again, multiple other federal agencies.

Since my second retirement in August of 2001, I have worked as an emergency preparedness consultant in the nuclear industry.

As you can see, most of my career has been in emergency planning in radiation-related fields. And, like many people whose career is devoted to one area, I am occasionally reminded that many people are not familiar with the extensive history and experience in emergency planning that is the standard for commercial nuclear power plants.

I look at my testimony today as an opportunity to provide enlightenment about an area that has, since September 11, generated considerable concern and much speculation among many Americans, and that is, the history of emergency preparedness programs at U.S. nuclear power plants.

Emergency planning for nuclear plants actually goes back to 1970. In my testimony today, I will review how the work of the past 30 years has put in place emergency preparedness program elements to protect the health and safety of the public. This will include sections on:

- What is Emergency Planning?
- What is the Regulatory History of Emergency Planning?
- What are the Existing Roles and Responsibilities?
- What are the Existing Emergency Preparedness Program Elements?
- What is the Experience with Nuclear Plant Emergency Response Programs?

#### What is the Nuclear Industry's Commitment to Emergency Planning?

Any comprehensive history of emergency planning must include the regulatory history, complete with titles and citations that can often make for laborious reading. But to not detail that history would be a disservice to this committee.

#### A. WHAT IS NUCLEAR PLANNING?

Emergency Preparedness has three goals: 1) to protect the plant worker; 2) to protect the plant equipment; and 3) to protect the health and safety of the general public. An emergency plan and implementing procedures provide the basis for safeguarding the population and the work force.

Since 1980, every nuclear power plant in the United States has been required by federal law to create an on-site emergency response plan and ensure that off-site plans exist to protect public health and safety. The Nuclear Regulatory Commission (NRC) approves on-site plans. Approval of off-site plans is coordinated between NRC and the Federal Emergency Management Agency (FEMA). Both on-site and off-site plans must be approved for the plant to obtain and retain an operating license.

Total emergency preparedness requires plans for the response of both systems and people. The engineering design of the plant provides for safe operations. The operating procedures address appropriate systems response during emergencies. The emergency plan and implementing procedures provide the basis for safeguarding the population and the work force.

In the nuclear industry, effective emergency preparedness depends on mutually supportive planning. The multi-jurisdictional nature of the emergency planning zone (EPZ) plan requires that arrangements must be made at multiple governmental levels – contiguous counties within the 10-mile EPZ cooperating with mutual aid agreements, joined by state and federal agency coordination. Federal departments and agencies, State and local governments, voluntary disaster relief organizations, and the private sector

work together to meet basic human needs and restore essential services after an emergency.

#### **B. REGULATORY HISTORY**

In December 1970, the NRC (then the Atomic Energy Commission) introduced emergency planning requirements into the regulations. (35FR19568, December 24, 1970) *The content of application, technical information section was amended to include Section 10CFR50.34 "A discussion of the applicant's preliminary plans for coping with emergencies". 10CFR50.34 embodying the first emergency planning rules, required a discussion of plans for coping with emergencies, and set forth-minimum requirements. Also, Appendix E provided additional items that shall be included in these plans.* (35FR19568, December 24, 1970).

In 1973, the Federal interagency responsibility for radiological incident emergency response planning was identified in the Federal Register Notice of January 17. (38FR2356). The notice was revised December 24, 1975, and published in the Federal Register (40FR248).

In the January 17, 1973 notice, the Environmental Protection Agency (EPA) was assigned the responsibility for:

- (1) establishing protective action guidelines;
- (2) recommending appropriate protective actions;
- (3) assisting State agencies in the development of emergency response plans; and
- (4) establishing radiation detection and measurement systems.

In December 1974, the NRC developed NUREG75-111, "Guide and Checklist for the Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities" to assist in developing the offsite plans.

In September 1975, the EPA issued EPA-520/1-75-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents."

In 1975, the NRC published Regulatory Guide 1.101 that set out the format and content of on-site emergency plans. At that time, off-site emergency planning was required for licensing purposes only in the low-population zone (LPZ) located within about a 3-mile radius of the plant. The EPZ was defined in 10CR100.11. At this time the only plan required to be submitted was the plant plan.

In 1976, a Task Force of NRC and EPA representatives determined the appropriate degree of emergency response planning efforts. A joint EPA/NRC document in December of 1978: NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants." introduced the concept of establishing emergency planning zones

(EPZs) – the Plume Exposure Pathway (0 to 10 miles) and the Ingestion Pathway (0 to 50 miles).

In December 1979, FEMA was assigned lead responsibility for the evaluation of offsite planning and response by President Carter in a White House statement and Fact Sheet. FEMA developed a review process, established in the 44 CFR350 regulations. These regulations were finalized in the Federal Register Notice on September 28, 1983 (48FR44332). NRC retained jurisdiction over plant licensing and operation and on-site emergency preparedness.

In August 1979, extensive changes were made to the NRC's regulations following the TMI accident. The changes were noticed in the August 19, 1979 Federal Register pages 55402 – 55418. There were several key changes to the regulations. These included the addition of 10CFR 50.47 and major additions to Appendix E. The additions included detailed instruction for developing the emergency response organization, assessment action, activation of the emergency organization, notification procedures, emergency facilities and equipment, training, emergency procedures, recovery efforts and emergency computer systems.

In November 1980, a joint NRC/FEMA document, NUREG-0654/FEMAEP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" establishing the substantive basis for both on-site and off-site emergency planning. It required joint licensee/state/off-site agency participation in an annual simulated accident scenario (exercise) as a condition for an operating license.

On December 16, 1980, memorandums of understanding written between the NRC and FEMA were formalized.

In September 1984, the Federal Radiological Emergency Response Plan (FRERP), published as an interim document in the September 12, 1984, Federal Register (29FR35896) outlined the authority and responsibility of each of the 12 federal agencies that have the resource and capabilities needed to respond to a radiological emergency. The plan was first tested in a full-scale exercise at the St. Lucie Nuclear Facility on March 6 - 8, 1984. FEMA published the final operational FRERP in the November 8, 1985, Federal Register (50FR46542).

In February 1985, the NRC/FEMA response was published in NUREG-0981/FEMA-51, Rev. 1, "NRC/FEMA Operational Response Procedures for Response to a Commercial Nuclear Reactor Accident".

In November 1985, FEMA issued FEMA-REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants". The Guide establishes the areas to be reviewed and the acceptance criteria.

In November 1986, FEMA issued Guidance Memorandum EV-2, "Protective Actions for School Children". The purpose of the guidance is to assist State and local government

officials and administrators of public and private schools in developing emergency response plans for use in protecting the students.

In 1992, the Federal Response Plan (FRP) was implemented. (This comprehensive plan may be implemented concurrently with the Federal Radiological Emergency Response Plan (FRERP), which details the Federal response to a peacetime radiological emergency). The FRP describes the policies, planning assumptions, concept of operations, response and recovery actions, and responsibilities of 27 Federal departments and agencies, including the American Red Cross, that guide Federal operations following residential declaration or emergency.

In July 1996, a Federal Register notice announced the strategic review of FEMA's Radiological Emergency Preparedness (REP) program and requested comments.

In 1999, the Environmental Protection Agency (EPA) published the EPA Radiological Emergency Response Plan (EPA-RERP) to replace the 1986, EPA Radiological Emergency Response Plan. The EPA-RERP has been developed to reflect changes in EPA's programmatic and operational concepts for responding to radiological incidents and emergencies. The new plan represents EPA's integrated approach to management of radiological releases.

In 1999, the NRC's risk significance program; the Reactor Oversight Process integrated the NRC's inspection, assessment, and enforcement programs. The Operating Reactor Assessment Program evaluates the overall safety performance of operating commercial nuclear reactors and communicates those results to licensee management, members of the public, and other government agencies.

The assessment program collects information from inspections and performance indicators (PIs) in order to enable the agency to arrive at objective conclusions about the licensee's safety performance. Based on this assessment information, the NRC determines the appropriate level of agency response, including supplemental inspection and pertinent regulatory actions ranging from management meetings up to and including orders for plant shutdown. The NRC's revised inspection program includes three parts: baseline inspections; generic safety issues and special inspections; and supplemental inspections performed as a result of risk significant performance issues.

In April 2001, NRC published new EP inspection procedures to determine, in conjunction with the performance indicators, whether a licensee is meeting the Cornerstone Objective and Performance Expectation. The cornerstone objective is "To ensure that the licensee is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency". The cornerstone performance expectation is "Demonstration that reasonable assurance exists that the licensee can effectively implement its emergency plan to adequately protect the public health and safety in the event of a radiological emergency."

In September 2001, FEMA published the "Radiological Emergency Preparedness: Exercise Evaluation Methodology" (66FR47526), the Radiological Emergency Preparedness exercise evaluation areas and associated criteria, to be effective October 1, 2001.

In April 2002, FEMA published corrections to certain provisions of the "Radiological Emergency Preparedness Exercise Evaluation Methodology" exercise evaluation areas.

Since 1979 more than 2000 graded exercises have been conducted. In-depth critiques are conducted following each exercise and areas for improvement, as well as strengths, are identified. The improvement areas are corrected and tested in subsequent exercises to prevent recurrence.

#### C. ROLES AND RESPONSIBILITIES

Before March 1979 accident at Three Mile Island (TMI), off-site emergency planning at nuclear power sites by utilities and local and state authorities was done under the NRC oversight and basically on a voluntary basis. Specific requirements for off-site emergency planning as a precondition for licensing had not been established, and as a result, the capabilities to respond to a radiological accident varied greatly.

One of the major lessons learned from TMI was the need for a comprehensive, coordinated response plan, by every level of government and integration with on-site and off-site plans.

To investigate these and other concerns, President Carter appointed a special investigative body, the Kemeny Commission, to study the Three Mile Island accident. Following the Commission's report, the President directed that principal federal responsibility for off-site emergency planning around nuclear power plants would be transferred from NRC to FEMA.

FEMA had been established in 1978 (prior to TMI) in order to create a single emergency planning and response manager for the Federal government. FEMA coordinates off-site measures at all levels of government to safeguard the population, while NRC maintains responsibility to oversee emergency actions taken inside the nuclear plant boundaries. NRC maintains its authority as the licensing authority for commercial nuclear power plants; FEMA provides recommendations and findings to NRC for use in its deliberations. Both agencies have issued extensive instruction in the Code of Federal Regulations to explain how their respective responsibilities are carried out.

Following is a brief description of licensee, state, local, and federal responsibilities:

- **Licensees** are responsible for operating the plant in a safe manner and for being prepared to respond to a radiological emergency in a manner such as to effectively mitigate the consequences of the emergency. If an accident should occur, the licensee is responsible for stabilizing the situation, bringing the plant to a safe condition,

limiting the consequences, implementing onsite emergency planning, making offsite initial notifications and protective recommendations and providing sufficient plant status information to assist in offsite emergency response. The licensee is responsible for monitoring the plant and radiological parameters to determine the level of the emergency (unusual event, alert, site area emergency, or general emergency and recommend onsite and offsite protective actions.

- **State and local agencies** are responsible for maintaining the offsite emergency preparedness. In case of an accident, the State and local designee will consider the emergency action recommendation of the licensee and make any offsite protective action decision, including sheltering and evacuation. The offsite authorities are responsible for activating the alert and notification systems. Having alerted the public, the State or local agency will provide additional information to the public through the electronic media including what protective actions should be taken.
- **State Emergency Management Agencies** are the lead organization responsible for developing the State Radiological Emergency Preparedness Plan and for coordinating the development of associated county plans. They have a lead role and responsibility for the training of State and local emergency response organizations and for the conduct of public information and education. (In California the local agencies have the lead role).
- **State Departments of Health** are the state technical agencies responsible for the assessment of the impact of a radiological emergency and the environment. These agencies also function as the technical advisor to the emergency management organization in radiological matters and protective actions.
- **County and municipal emergency management officials** are responsible for the development and implementation of their respective emergency response plans. The federal, state, county, and local governments have developed coordinated radiological emergency preparedness plans. The plans are coordinated with the licensee on-site emergency plan and periodically exercised to ensure a fully coordinated, effective response and the availability by the required off-site support for an on-site emergency. State and local emergency plans have been prepared for every commercial nuclear power site in the country. All have received FEMA 44CFR350 evaluation and have been tested in exercises.
- **The federal government's** role is to support the licensee, State, and local agencies in an emergency.
- **The Nuclear Regulatory Commission (NRC)** is the Cognizant Federal Agency when an event occurs at a commercial nuclear power plant. The NRC/FEMA response is documented in NUREG-0981/FEMA 51, Rev. 1, "NRC/FEMA Operational Response Procedures for Response to a Commercial Nuclear Reactor Accident," February 1985. The agency maintains a 24-hour-a-day Headquarters Incident Response Center where the Operations Officer is an engineer or scientist

specifically trained for that job. The Center functions as the NRC's point of direct communication through dedicated telephone lines with all operating commercial nuclear power plants. The Center notifies additional NRC personnel, including regional offices, and other Federal agencies as needed. During an emergency, the NRC establishes three teams:

- the Reactor Safety Team follows the course of the plant event and attempts to anticipate future plant responses;
- the Protective Measures Team follows the event from the radiological standpoint; and
- the headquarters Executive Team determines if or when to escalate the NRC response

The teams also include Congressional, Government, and Public Affairs liaison. NRC participates in a licensee-graded exercise once each quarter.

- **The Federal Emergency Management Agency (FEMA)** is responsible for off-site emergency plans and maintains the Emergency Information and Coordination Center (EICC) in Washington, DC, with communications capability to its regions and other Federal agencies. FEMA's Radiological Emergency Preparedness Program (REP) has a two fold emphasis:
  1. assistance to state and local governments in developing emergency plans (44 CFR 350)
  2. coordination of federal agencies' assignments to carry out federal functions (44 CFR 351)

#### **D. WHAT ARE THE ELEMENTS OF AN EMERGENCY PREPAREDNESS PROGRAM?**

All U.S. nuclear reactor facilities are required to participate in independently reviewed, full-scale emergency exercises every two years (and training drills in off years). For each exercise, the licensee creates a confidential emergency scenario to be played out by plant staff and local emergency response organizations, including law enforcement, local hospitals, radiological monitoring teams and others. Post-exercise critiques by the Federal agencies and exercise participants identify areas that need to be corrected in future exercises or improvements that need to be made to the plan itself. Following is a brief summary of the elements that are tested regularly:

##### **• ONSITE EMERGENCY ORGANIZATION**

The licensee is responsible for developing the on-site emergency organization of plant staff personnel for all shifts. An emergency coordinator must be designated who shall be on shift at all times and have the authority and responsibility to immediately and unilaterally initiate any emergency actions required to protect the health and safety of the public. Certain responsibilities cannot be delegated to others in the organization, including the decision to

notify and to recommend protective actions to authorities responsible for offsite emergency measures.

- **EMERGENCY CLASSIFICATION SYSTEM**

All utilities at all commercial nuclear power plants use a standard emergency classification system. The emergency classification system provides for graduated levels of response from minor events of low consequence to very severe events. Specific Emergency Action Levels (EAL) trigger each classification.

- **EMERGENCY COMMUNICATIONS AND NOTIFICATION METHODS AND PROCEDURES**

The licensee must have the capability to notify responsible State and local government agencies within 15 minutes after declaring one of four emergency action levels. The licensee must also demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the 10-mile plume exposure pathway. The notification system should have the capability to essentially complete the initial notification of the public within the EPZ within about 15 minutes once the offsite responsible State or local authorities decide to notify them. In November 1985, FEMA issued FEMA-REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants.

**Offsite Communications:**

Each licensee is responsible for a primary and backup telephone system to make notifications to offsite agencies (e.g., NRC, State, and counties) within 15 minutes after recognition and classification of an emergency condition at the plant. A dedicated telephone line has been established between the plant control room and the NRC's headquarters Incident Response Center. IE Information Notice No. 86-97, "Emergency Communications System," dated November 28, 1986, defines the emergency communications requirements.

**Public Alerting Systems:**

Off-site emergency agencies are responsible for notifying the public of an emergency and activating the notification system. However, the licensee must be able to demonstrate that a notification system is available within the 10-mile EPZ. Sirens are the predominant method of public alerting around the U.S. commercial nuclear plants and federal regulations have established criteria for the design of acceptable siren systems. The number of sirens that are required for the 10-mile EPZ will depend on the population density, type of terrain and other limiting factors. The average site will have between 50 to 85 sirens positioned throughout their EPZ.

**Public Notification:**

Once the public has been alerted to an emergency, the capability must be in place to provide an informational message or instructions to the public through out the 10 miles EPZ within 15 minutes. This capability must be available 24 hours per day. The most common method of providing instructions to the public is local radio and television stations. Another method of providing instructions to the public is by the Alert Notification System (ANS), a system of AM and FM radio stations which provide or are capable of providing, 24 hours per day transmission and have backup power generation capability.

In order to instruct the public to tune to a specific radio, television, or an EBS radio station for emergency information once alerted, emergency preparedness public information brochures are distributed throughout the 10 mile EPZ. The brochures identify the method of alerting and measures to be taken once alerted. The brochures discuss the various protective measures that residents may be asked to take, including sheltering, evacuation, and use of thyroid blocking agents or other precautionary measures.

- **PUBLIC EDUCATION AND INFORMATION**

The responsibility to insure the education of the general public concerning radiological emergencies and protective actions is jointly shared by the licensee, the State and the local governments. Information is disseminated annually to the public within the 10-mile EPZ. Specifically, information is provided describing how they will be notified in the event of an emergency and what initial actions should be taken upon notification. In addition, educational information on radiation contacts and special needs for the handicapped are addressed, as well as how to obtain additional information.

- **EMERGENCY FACILITIES AND EQUIPMENT**

Adequate provisions must be made for facilities and equipment to support the response to a given emergency. This includes monitoring, assessment, decontamination, first aid treatment and transportation. The physical facilities include an onsite technical support center, an operational support center, a near-site emergency operations facility, an onsite and offsite communications system, and a media center.

**Emergency Response Centers:**

**Control Room (Onsite)**

The Control Room is the primary facility where plant conditions are monitored and controlled and where corrective actions are taken to mitigate degradation of reactor systems.

**Technical Support Center (Onsite)**

The TSC is an emergency operations work area from that designated technical and engineering personnel trend plant conditions in order to predict further degradation and to devise appropriate corrective actions.

**Operational Support Center (OSC) (Onsite)**

The OSC is the assembly point for personnel providing emergency assistance to the Emergency Organization. The purpose of the OSC is to provide an assembly and staging area for essential operations support personnel who are deployed into onsite areas.

**Emergency Operations Facility (EOF) (Offsite)**

The EOF is the primary offsite center for the management of the licensee's emergency response, coordination of radiological and environmental assessments, and determination of recommended public protective actions.

**Joint Public Information Center (JPIC) (Offsite)**

The JPIC is the principal media contact point for the licensee, state, and local communities during a radiological emergency.

**State Emergency Operations Center (EOC)**

This facility provides the management of offsite emergency responses. The State EOC will serve as a location from which local officials may request manpower and resource assistance.

**Local Community Emergency Operations Centers (EOC)**

The local EOCs serve the purpose of maintaining a communications point within each community as well as providing this capability with other adjacent communities and the State. Each local chief executive can direct protective actions to be taken for his community and can activate the public alerting system for his community.

- **ACCIDENT ASSESSMENT**

The means for determining the magnitude of and for continually assessing the impact of the release of radioactive material must be available to respond to an accident. Dose assessment is performed using actual in-plant effluent radiation monitors to generate the radionuclide source term, meteorological instrumentation, and associated hardware to develop a dispersion model for an atmospheric release, hydrological instrumentation to develop dilution factors for a liquid release, and the assumption of appropriate dose conversion factors (DCF) to account for the isotopic mixture and its concurrent chemical and physical state.

As part of the Radiological Environmental Monitoring Program, nuclear power plants maintain a fixed environmental monitoring system, within the 10-mile EPZ, consisting of Thermoluminescent Dosimeters (TLDs), air particle detectors and another environmental media sampling stations. During

and/or subsequent to emergency conditions, this program is modified to collect and analyze additional samples from existing stations. Results are used to confirm radiation exposure estimates and environmental calculations.

- **PROTECTIVE RESPONSE**

A range of protective actions for emergency workers and the public have been developed for the 10-mile EPZ. Systems are available to warn and advise onsite individuals including employees not having emergency assignments, visitors, contractors, construction personnel, or others in public access areas. Provisions have been made for these individuals to leave the site by designated routes to some suitable offsite locations.

If needed, monitoring and decontamination capabilities of individuals leaving the site have been established. Having requested non-essential personnel to leave the site, the licensee must have the capability to account for all individuals onsite and be able to provide the names of missing individuals within 30 minutes of the start of an emergency. The licensee must be able to account for all onsite individuals continuously after that time.

The licensee will also make recommendations, if needed, to the affected State and local authorities. This may include sheltering, evacuation, or use of potassium iodide in a sector around the plant, early dismissal of school children, or relocating individuals in a specific sector. As part of this process, the emergency plan includes a designated evacuation route and relocation centers in most areas and shelter areas. People whose mobility is impaired and the means for registering and monitoring of individuals at relocation centers have been established.

For the 50-mile ingestion pathway, the procedure for protecting the public from consuming contaminated foodstuffs is addressed. The requirement that dairy animals be put on stored feed is a protective action. Lists are available of the names and locations of all plants that process milk products and other agricultural products.

- **RADIOLOGICAL EXPOSURE CONTROL**

The licensee has established onsite exposure guidelines that are consistent with the EPA's Emergency Worker and Lifesaving Activity Protective Action Guidelines. These guidelines address providing first aid, performing assessment actions, and decontamination, removal of injured persons and providing transportation and medical treatment of the injured. As an example of guidance developed on this subject, FEMA issued Guidance Memorandum EV-2, "Protective Actions for School Children" dated November 13, 1986. The purpose of the guidance is to assist State and local government officials and administrators of public and private schools in developing emergency response plans for use in protecting the students.

- **MEDICAL AND PUBLIC HEALTH SUPPORT**

Local and backup hospitals and medical services are identified for medical support of contaminated injured individuals. The licensee is responsible for having the onsite first aid capability. Transportation arrangements of the injured persons to the medical facilities are also part of the emergency planning program.

- **RECOVERY AND REENTRY PLANNING AND POST ACCIDENT OPERATIONS**

Following the accident and when the plant has been stabilized, the licensee will go into the recovery phase of the event.

- **EXERCISES AND DRILLS**

Each licensee is required to exercise its emergency plan annually. Each licensee is required to exercise with offsite authorities within the plume exposure pathway 10-mile EPZ biennially. All parties within the ingestion pathway 50-mile EPZ must exercise its plan every six years.

- **CONTINUAL IMPROVEMENT**

**Critiques and Corrective Actions:**

Following each exercise or drill, the licensee and Federal, State and local emergency response personnel conduct an in-depth critique. Areas for improvement are noted and placed in the licensee corrective action system. Corrective action attention is a year round responsibility.

- **Audits, Reviews, and Self Assessments:**

One element assuring corrective actions is the audit or program review process through which all emergency preparedness programs work. Program reviews (checks) range from one end of the spectrum to the other...from quarterly communications checks (internally and externally) and equipment/facility checks to independent program reviews of the EP program. Periodic (on a set schedule) tests of the prompt public notification system are also a part of this process.

Audits are conducted by the licensee's own quality assurance departments and inspections are conducted at various times by outside regulatory groups such as the NRC. These audits/inspections cover all aspects of the emergency preparedness program. In all cases, the associated emergency plans and procedures must be reviewed at least annually and revised as necessary.

Licensee's periodically self-assess their program elements. Frequently the licensee will request a subject matter expert from another department or licensee to participate in the self-assessment.

- **EMERGENCY RESPONSE TRAINING**

Annual training of company personnel (onsite and offsite) and training of non-company personnel (offsite at the local level) is conducted. This process is continual throughout the year. This element of emergency planning incorporates the following methods: classroom instruction; performance-based training, walk through for specific groups within certain emergency response facilities and between facilities; integrated drills; training drills; and medical drills.

- **EMERGENCY PLANNING ZONES (EPZ)**

In 1978, a joint task force of the US Environmental Protection Agency (EPA) and US Nuclear Regulatory Commission (NRC) developed the planning basis for offsite emergency preparedness efforts considered "necessary and prudent" for power reactor facilities. During the development of the planning basis, the task force received substantial input from other Federal agencies and the Inter-organizational Advisory Committee on Radiological Emergency Response Planning and Preparedness of the Conference of State Radiation Control Program Directors, which also included representatives of the National Association of State Directors for Disaster Preparedness and the U.S. Civil Defense Council.

Subsequently, the planning basis has been adopted by the Federal Emergency Management Agency, which assumed the Federal lead role in offsite radiological emergency planning and preparedness responsibilities under order from President Carter in 1979. This planning basis continues today as the primary basis utilized by the Federal Radiological Preparedness Coordinating Committee (FRPCC)<sup>1</sup> with respect to coordinating all Federal responsibilities for assisting State and local governments in radiological emergency planning and preparedness activities.

An important element of the planning basis developed by the NRC/EPA task force is that it defines the geographical area around nuclear power plants over which planning for predetermined actions should be carried out to protect public health and safety in the event of a radiological emergency at a nuclear power plant. In developing the planning basis, the task force did not attempt to define a single accident scenario. Rather, the task force considered a number of potential accidents, including the core-melt accident release scenarios of the Reactor Safety Study.

The planning basis was related to two predominant pathways by which a population might be exposed to radiation released as the result of an accident. The two exposure pathways include the following:

---

<sup>1</sup> The FRPCC is chaired by FEMA, and includes representatives from the Departments of Commerce, Defense, Energy, Health and Human Services, Transportation, Agriculture, Interior, Veterans Affairs, State, Housing and Urban Development, Justice, and the General Services Administration, NASA, USEPA and USNRC.

- a. The plume exposure pathway includes direct exposure from radiation in a plume as it passes, as well as from radioactive material deposited on the ground or other surfaces. The pathway also includes exposure from inhalation of radioactive material in the passing plume. The recommended protective actions for the plume exposure pathway are evacuation from the area, or sheltering, if timely evacuation is not practical. More recently, the States are considering whether to include the distribution and use of potassium iodide to protect against exposure from radioactive iodine in the plume, as a supplement to evacuation and sheltering.
- b. The ingestion exposure pathway includes exposure from the consumption of contaminated water, milk, or foods. The recommended protective actions for the ingestion pathway include near-term actions, such as removing cows from pasture and putting them on stored feed supplies, as well as long-term actions such as monitoring and interdicting sources of water, milk and foods, as necessary to protect public health and safety.

The areas, over which planning efforts are carried out, referred to as emergency planning zones (EPZs), are associated with the plume exposure pathway and the ingestion exposure pathway. The EPZs are defined as the areas for which planning is carried out to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The two EPZs are discussed in more details below:

- a. The plume exposure EPZ includes a radius of 10 miles (more than 300 square miles) around the plant. The size of the plume exposure EPZ is based on the following conclusions by the NRC/EPA task force:
  - Projected doses to the public from design basis accidents would not exceed Protective Action Guide (PAG) levels<sup>2</sup> beyond the 10 mile zone;
  - Projected doses from most core melt sequences would not exceed PAG levels beyond the 10 mile zone;
  - For the worst-case core melt sequences, immediately life-threatening doses would generally not occur beyond the 10 mile zone;

---

<sup>2</sup> Protective Action Guide (PAG) levels refer to criteria that are established by the EPA. The PAG is a level of projected radiation dose from an unplanned release at which a specific protective action should be taken. For example, the PAG for initiating evacuation or sheltering is when members of the public are projected to receive 1 rem or more from an actual or anticipated release. The PAGs are published in EPA Report 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992.

- Detailed planning within the 10-mile zone would provide a substantial base to support the expansion of emergency response efforts in the event this proved necessary.
- b. The ingestion exposure EPZ includes a radius of 50 miles (more than 2500 square miles) around the plant. The size of the ingestion exposure EPZ is based on the following conclusions by the NRC/EPA task force:
  - The downwind range within which contamination might occur will generally not exceed PAG levels beyond the 50 mile zone because of wind shifts during the release and travel periods;
  - There may be conversion of radioactive iodine suspended in the atmosphere during transit to chemical forms that do not readily enter the ingestion pathway;
  - Much of the particulate material in a plume will have deposited on the ground during transit within the 50 mile zone; and
  - The small likelihood of exceeding ingestion pathway PAG levels at 50 miles is comparable to the small likelihood of exceeding plume exposure PAG levels at 10 miles.

The 10 and 50 mile EPZs are currently employed in nuclear power plant emergency preparedness programs as the basis for planning, testing and exercising predetermined emergency response capabilities.

**D. WHAT IS THE EXPERIENCE WITH NUCLEAR PLANT EMERGENCY RESPONSE PROGRAMS?**

Emergency response plans developed by the nuclear industry have been activated successfully by local officials for use in other emergencies. A few examples:

- The evacuation of 10,000 people from Cedar Rapids, Iowa, in July 1985, following a fire at a city-operated sewage treatment plant that dispersed a black cloud of toxic fumes over the city. State and local officials used a draft plan developed for Alliant Energy's Duane Arnold nuclear plant.
- The evacuation of 17,000 residents of St. Charles Parish, La., following a leak from a nearby chemical plant in December 1982. State and local officials worked from a draft plan for Entergy's Waterford 3 nuclear plant, which was not yet operating.

**E. WHAT IS THE NUCLEAR INDUSTRY'S COMMITMENT TO EMERGENCY PLANNING?**

Emergency preparedness at U.S. nuclear power plants is an integral part of daily operations. A commitment to excellence throughout the industry coupled with

continual training and testing, has produced a high level of preparedness. For example:

- Emergency response plans are constantly upgraded through lessons learned from actual plan activation, as well as repeated drills, exercises and independent critiques.
- Training programs are conducted annually for all emergency response personnel. The National Nuclear Accrediting Board accredits training programs for operators and technical staff.
- Effective methods have been developed to assess performance in drills and exercises, and to improve emergency preparedness through lessons learned.
- State-of-the-art response facilities have been built and existing facilities upgraded to aid effective handling of emergencies.
- Sophisticated plant computer systems have been developed to serve as effective tools for dealing with emergencies.
- Advancements in communications technology have been incorporated to improve the industry's ability to respond to emergencies.



**Angelina S. Howard**  
Executive Vice President

February 7, 2003

James Lee Witt Associates, LLC  
Ben Franklin Station  
P. O. Box 7998  
Washington, DC 20004-7998

**Subject: Industry response to "Review of Emergency Preparedness at Indian Point and Millstone, DRAFT" Dated January 10, 2003**

The Nuclear Energy Institute (NEI)<sup>1</sup> submits the following comments on behalf of the nuclear industry. Although the draft report on Indian Point and Millstone emergency planning makes some recommendations that merit industry consideration, faulty methodology used to evaluate the programs results in deeply flawed findings and recommendations. There is no analytical basis for the draft report's conclusion that the emergency plans are ineffective.

The draft report ignores the fact that emergency preparedness programs are based on a fundamental commitment to safe plant operations and to the defense-in-depth concept of nuclear plant physical design and construction. The nuclear industry's emergency preparedness programs are the gold standard worldwide, tested and proven over more than 20 years. Although emergency plans developed by the industry have been implemented by state and local government after scores of industrial and natural disasters, they have never been needed because of a nuclear plant incident.

Emergency response plans are regularly tested and reviewed to ensure that public health and safety is protected. Decades of experience reviewing and exercising these plans and their procedures attest to their effectiveness in protecting the public. Federal law requires every nuclear power plant to develop and regularly test a comprehensive emergency response plan. The plan must provide protective measures for communities in 10-mile and 50-mile emergency zones. These public safety zones were determined by the Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC), with input from federal agencies, and there are specific emergency response measures for each of the two zones. The Federal Emergency Management Agency (FEMA) has the lead role in emergency planning for non-industry participants in the off-site emergency plan, including local and state government.

---

<sup>1</sup> NEI represents nearly 275 companies, including every U.S. company licensed to operate a commercial nuclear reactor, industry suppliers, fuel fabrication facilities, architectural and engineering firms, organized labor, law firms, radiopharmaceutical companies, research laboratories, universities and international nuclear organizations.

James Lee Witt Associates, LLC  
February 7, 2003  
Page 2

The multi-agency effort determined that a 10-mile radius encompassing a reactor facility is an appropriate emergency planning zone in the event of a release of radioactive material from the reactor. This is an appropriate public protection zone regardless of whether a release of radioactive material is caused by a plant accident or sabotage. The impact on the reactor from either scenario would evolve over a period of several hours, thus providing time for orderly sheltering or evacuation of the public. Sheltering of the public and selective evacuation are the most effective means for protecting public health and safety. Moreover, if some evacuation is necessary, only a portion of the zone would be affected, not the entire 10-mile radius. Projected radiation dose as a result of most major reactor accidents is not a threat to public health and safety beyond the 10-mile zone, and evacuation of citizens beyond this area is not necessary.

The agencies also concluded that a 50-mile planning zone would be sufficient to protect the public from limited exposure as a result of consumption of contaminated water, milk or food. Similar to the 10-mile zone, only a portion of the 50-mile zone would be affected.

Finally, the scientific basis used by the NRC to develop the guidelines pertaining to emergency preparedness is over 20 years old. The scientific analyses used by the NRC and others are overly conservative in light of current scientific knowledge.

Emergency preparedness is integrated with the industry's comprehensive security program. Although America's nuclear plants were the best-defended industrial facilities prior to Sept. 11, 2001, additional security measures since the terrorist attacks include extending plant site security zones and increasing security patrols within these zones. Security forces were increased by 33 percent to approximately 7,000 well-armed, highly trained officers at 67 sites.

#### **Industry Response to Principal Findings of the Draft Report**

The report authors reviewed the overall emergency plans for Indian Point and Millstone, but did not review all of the detailed procedures that Entergy uses to implement its broad-based emergency plans. As a result, many concerns raised in the draft report are based on incomplete or inaccurate information.

The draft report raises issues in a variety of areas that the industry will consider as part of an ongoing comprehensive review of its emergency planning programs. These issues include:

- notification of the public in the event of a plant emergency
- industry/government coordination
- terrorism response
- public education of emergency response plans, and
- response management.

James Lee Witt Associates, LLC  
February 7, 2003  
Page 3

The following are responses to the major findings in the draft:

- 1. The report charges that plant emergency plans are built on regulatory compliance and not on a strategy that protects from radiation.*

The industry's fundamental approach to emergency preparedness incorporates multiple protective measures to prevent the release of radiation in the first place. Nuclear plants are designed, built and operated to prevent a radioactive release, even in extreme cases, including natural disasters or acts of terrorism.

The industry's emergency response plans use a combination of evacuation and sheltering to safeguard the public should there be a release of radioactive material at a nuclear power plant. As noted earlier, sheltering is often more effective to protect the public rather than evacuation. If needed, evacuation is well planned and would be performed so citizens closest to the plant are evacuated first. The Witt report recognizes this point, using as an example the 1979 evacuation of 217,000 people in Mississauga, Ontario, due to the derailment of a train carrying chemicals. Evacuation was first initiated for residents and special facilities closest to the derailment. Evacuations then proceeded centrically moving away from the hazard. Evacuations in areas near nuclear power plants are based on the same systematic and orderly plan.

- 2. The draft report concludes that people will not comply with official directions and plans will not consider the reality and impacts of a spontaneous evacuation.*

Industry reviews have found otherwise. Well-coordinated evacuation planning by industry and local/state government officials is tested regularly in drills and exercises. Moreover, a 1989 industry report<sup>2</sup> provides insights and lessons learned from the analysis of more than 50 large-scale emergencies—both from natural events and industrial accidents—that required the evacuation of up to 300,000 people. The report found that the evacuations proceeded smoothly and safely, even when managed by local response officials without advance preparation and with little or no evacuation training.

The industry frequently drills, reviews and improves its emergency plans to ensure that public health and safety is protected. Nuclear plant emergency plans are so effective that communities have used them in response to various emergencies, such as chemical spills, fires and natural disasters. The draft report acknowledges that communities that have “undergone nuclear [emergency] planning are more rigorously prepared and capable than most communities that do not have nuclear power plants in their midst.” However, this capability is not factored into the draft report’s overall findings.

---

<sup>2</sup> NUMARC/NESP-004, Feb. 1989, “Identification and Analysis of Factors Affecting Emergency Evacuations,” prepared by Roy F. Weston, Inc.

James Lee Witt Associates, LLC  
February 7, 2003  
Page 4

*3. The draft report concludes that the emergency plans do not consider additional ramifications of a release caused by a terrorist. It also charges that the plans do not account for the impact of spontaneous evacuation.*

A nuclear facility's emergency response plan, including possible evacuation, would be implemented in the same manner regardless of the scenario of events that leads to an accident. If a terrorist attack resulted in a release of radiation at a nuclear power plant, the timing and quantity of a radiation release would be no different than plant accident scenarios to which emergency response teams plan and drill. A study recently completed by EPRI, on behalf of the industry and at the request of the NRC, determines that the offsite consequences resulting from a successful terrorist attack at a nuclear power plant are well within the NRC safety goals for severe reactor accidents. Further, state and federal officials involved in emergency response drills told *The New York Times* in January that the consequences of a reactor accident and terrorist attack would be about the same.

Even in the extremely unlikely event of a successful terrorist attack, operators are prepared to take actions necessary to maintain reactor safety. The draft report asserts that the timeframe used in a scenario leading to a rapid release of radiation is too quick for a response, but does not provide justification for this assertion.

In reality, state-of-the-art intruder detection and advance warning systems, robust physical barriers and a coordinated paramilitary response by on-site security forces would significantly extend the timeframe of the attack and allow significant reinforcements to reach the site. Moreover, plant operators are well trained on emergency procedures—including training on reactor simulators and frequent drills and exercises—to respond to emergencies with little or no warning. Industry procedures to protect the plant in the event of an accident or sabotage are approved by the NRC. The record of safe plant operations over decades of experience – together with proven, effective responses to actual plant events – demonstrates that these procedures are effective.

Apart from plant-specific issues, the draft report fails to take into account the fact that off-site emergency response to terrorist activity is a broad concern shared by the federal, state and local governments and industry. In the aftermath of Sept. 11, 2001, the NRC initiated a comprehensive review of requirements for plant security safeguards and policies. New NRC requirements, focused in part on emergency preparedness, have been implemented by the industry in response to broad, heightened terrorist alerts.

Industry, in coordination with the NRC and FEMA, developed guidelines for responding to NRC orders regarding such issues as plant evacuation and communications with communities near nuclear plants. These enhancements are incorporated into the plant's emergency implementing procedures, which were not reviewed by Witt Associates.

James Lee Witt Associates, LLC  
February 7, 2003  
Page 5

*4. The draft report concludes exercises are of limited use in identifying inadequacies and improving subsequent responses.*

The industry's expertise in off-site emergency preparedness programs for over 20 years has been measured by exercises that have been critiqued, and subsequently approved, by both the NRC and FEMA. Nuclear plant emergency plans have been effective in frequent exercises with local and state officials and emergency responders as well as in actual implementation after events such as hurricanes, chemical spills and other events. The draft report acknowledges that nuclear plant emergency response programs are effective for use in emergencies outside of the nuclear industry, yet does not recognize the role drills and exercises have played in making them so successful.

The nuclear industry has a long-standing philosophy of continuous improvement in all phases of plant operation. In that regard, the industry is conducting a comprehensive review of all U.S. nuclear plant emergency preparedness programs. The industry is reassessing emergency preparedness programs, focusing on management oversight of plant programs, a review of communications approaches, and application of lessons learned to each plant's emergency preparedness program.

**Conclusion**

It is unfortunate that a report of this magnitude, developed during a time of heightened public concern about security and emergency preparedness, is so deeply flawed. Rather than informing the debate, the draft report is being used by opponents of Indian Point to deliberately raise fear among the public.

As a result, the draft report undermines public confidence in a state-of-the-art emergency preparedness program that is the proven standard for orderly, successful evacuations of the public. The industry is committed to continue to evaluate and improve its security and emergency planning programs, and will continue to work with local, state and federal government to implement the best possible programs to protect public health and safety. We urge Witt and Associates to recognize these points in its final report.

NEI would like the opportunity to discuss these comments with you in more detail. If you have questions about the industry's comments on the draft report, please contact me at 202.739.8000.

Sincerely,



Angelina S. Howard



CHAIRMAN

UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
 WASHINGTON, D.C. 20585-0001

February 12, 2003

The Honorable Hillary Rodham Clinton  
 United States Senate  
 Washington, D.C. 20510

Dear Senator Clinton:

I am responding on behalf of the U.S. Nuclear Regulatory Commission (NRC) to your letter of January 22, 2003, in which you requested that the NRC review the recent draft report prepared by James Lee Witt Associates, LLC, for the Governor of the State of New York, regarding emergency preparedness at the Indian Point and Millstone facilities. You also requested that the NRC begin making changes to Federal regulations, as recommended in the draft report, and to make you aware of any additional statutory authority the NRC would require to make such changes.

The NRC has received a copy of the draft Witt report. The matters addressed in the draft report in large measure relate to offsite planning and preparedness, which, at least in the first instance, are matters within the purview of the Federal Emergency Management Agency (FEMA). While any judgment as to the overall state of emergency planning and preparedness is for the NRC to reach, in keeping with the longstanding Memorandum of Understanding (MOU) between FEMA and the NRC, we look initially to FEMA for its views on the draft report relating to offsite preparedness. One important issue which falls under our purview relates to plant security and the effect of potential terrorism. We consider it appropriate to comment on this issue as it figures prominently in the conclusions of the draft Witt report.

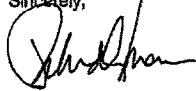
While we appreciate and recognize the effort that went into the draft report we believe the draft report appears to give undue weight to the impact of potential acts of terrorism on emergency planning and preparedness. Emergency preparedness programs are designed to cope with a spectrum of accidents, including those involving rapid, large releases of radioactivity. Emergency preparedness exercises have invariably included large releases of radioactivity that occur shortly after the initiation of events. Necessary protective actions and offsite response are not predicated on the cause of events. Whether releases from the plant occur as a result of terrorist acts or equipment malfunctions, emergency plans guide decision makers and responders in the same way. Preliminary results from our vulnerability studies do not indicate an increased source term or quicker release from terrorist-initiated events than is already addressed by the emergency planning basis required by NRC regulations and in place at Indian Point.

As FEMA assesses the implications of the draft Witt report and other relevant information on the state of emergency planning and preparedness, it is important to consider that significant steps have been taken to strengthen security of Indian Point and other nuclear plants since the September 2001 terrorist attacks. While all nuclear power plants have been required for many years to have security programs to defend against violent assaults by well-armed attackers, numerous additional steps have been taken since September 2001 to

thwart terrorist acts. The NRC issued orders in February 2002 to all operating nuclear power plant licensees to implement compensatory security measures for the current threat environment and also required licensees to take actions deemed appropriate to ensure continued improvements to existing emergency response plans. We have been working closely with numerous federal agencies (including FEMA, the Department of Defense, the Department of Homeland Security, the Department of Energy, the Federal Bureau of Investigation, and the Federal Aviation Administration), as well as with State governments, to enhance the security of nuclear facilities and activities.

The NRC will work with FEMA and other Federal agencies, as well as Entergy, New York State and county officials, in continuing efforts to ensure adequate emergency planning and preparedness. We understand from our discussions with FEMA that its assessment of the most recent offsite emergency planning exercise, which will give due consideration to input from the Governor, will be issued in the next several weeks. The NRC, in turn, will promptly respond to matters warranting action. With regard to your particular interest in the need for additional regulatory authority to implement changes, at this time in the review and evaluation of the Witt report, we are unaware of any statutory changes that may be required to protect public health and safety.

Please feel free to contact me with any further questions or concerns.

Sincerely,  
  
Richard A. Meserve

February 6, 2003

Mr. James L. Witt  
 James Lee Witt Associates, LLC  
 1201 F Street, NW, Suite 850  
 Washington, DC 20004

Dear Mr. Witt:

EPRI recently completed an independent research effort that should be useful in your assessment of nuclear power plant emergency planning efficacy. The research was started in May 2002 at the recommendation of the U.S. Nuclear Regulatory Commission (NRC), and the final report was drafted in early December 2002. I enclose a copy of the Executive Summary of this report entitled "Risk Characterization of the Potential Consequence of an Armed Terrorist Ground Attack on a U.S. Nuclear Power Plant" for your use and information. Due to the extremely sensitive nature of the information, the remainder of the report is under strict control, i.e., the equivalent of a Nuclear Plant Safeguards or Department of Defense Secret classification. EPRI is prepared to discuss this report with you in more depth, consistent with these national information safeguard controls.

By way of background, we understand that the NRC earlier prepared a classified study for the Office of Homeland Security (OHS) in order to assist OHS in the assessment of the public health and safety risk associated with a hypothetical terrorist attack on a commercial nuclear power plant. We presume that the NRC analysis was used by OHS to compare the risks associated with hypothetical terrorist attacks on other industrial facilities, such as chemical plants, petrochemical plants, oil refineries, etc. Subsequently, the NRC recommended that the nuclear industry perform a similar analysis in order to provide a comparison. The EPRI report, summarized in the enclosure, was prepared in support of this NRC request.

This EPRI research effort utilized proven risk assessment techniques to estimate both the likelihood and the consequences of an armed terrorist attack on a prototypic nuclear power plant. The plant evaluated is a composite, incorporating a large pressurized water reactor with a large dry containment. The site chosen has worse than average meteorological conditions and greater than average population density, and an average public emergency response. The results provide a conservative estimate of the health and safety impacts of such an attack, and indicate that the risks to the health and safety of the public resulting from an armed terrorist attack are very small.

Contrary to your draft conclusion, this risk is comparable to, or less than, the health and safety risk posed by other accidents postulated for U.S. commercial nuclear power plants. Our study estimates that the likelihood of one prompt fatality is less than one chance in 600,000 years; the

Mr. James L. Witt  
February 6, 2003  
Page 2

likelihood of one latent, cancer-induced fatality to be less than one chance in 300,000 years, and the likelihood of contaminating land that might lead to health effects to be one chance in 170,000. To put the results in perspective, the prompt fatality estimate is over 50 times lower than the NRC Safety Goals, and the latent fatality estimate is nearly 1000 times lower than the NRC Safety Goals. These NRC safety goals are less than 0.1% of the total risk to an individual. Please contact me if you would like to discuss this material further.

Very truly yours,



Theodore U. Marston, Ph.D.  
Vice President & Chief Nuclear Officer

TUM/bjr/9628L

Enclosure

c: K. Yeager, CEO, EPRI

Mr. TURNER. Mr. Matthiessen.

Mr. MATTHIESSEN. Mr. Chairman, Congressman Tierney and honorable members of the subcommittee, on behalf of the 20 million people in the New York metropolitan area who live and work in the shadow of Indian Point, I thank you for the opportunity to provide testimony on this crucial public health and safety issue.

Mr. Chairman, I am especially indebted to you for hosting this hearing and providing leadership in the State of Connecticut. I am also glad to see Congresswoman Kelly, our Representative in Westchester, here today, who also held a hearing. We appreciate that very much, and also appreciate the tough questions that you have asked of both NRC and FEMA. These are questions that need to be asked of these agencies, and we appreciate your leadership in this area.

You, like we, recognize that the public does have a right to know what the issues are surrounding these nuclear power plants and the emergency plans.

I am Alex Matthiessen, executive director of Riverkeeper, a not-for-profit environmental organization with over 5,000 members. Riverkeeper's mission is to protect the Hudson River and safeguard the watersheds that make up New York City's and Westchester's drinking water supply. Riverkeeper is not an antinuclear organization. However, given Indian Point's inappropriate proximity to New York City and the consequences a major radiological release would have on the area's residents, national security and the U.S. economy, we regard Indian Point in this post-September 11 world as a unique case that deserves special attention.

Located only 30 miles from the world's financial capital, Indian Point is arguably one of the country's most attractive terrorist targets. No facility, if successfully attacked, has the potential to wreak more economic and psychological damage and impose more loss of human life and health than Indian Point.

In this heightened risk environment, we need at least two things in order to justify the continued operation of Indian Point—plant security sufficient to repel a sophisticated terrorist attack and an emergency plan that actually works. Unfortunately, at Indian Point, we have neither.

In this post-September 11 threat environment, the NRC and FEMA are scrambling. Unfortunately, they are scrambling to protect the status quo and not public safety. It is troubling that these agencies are not using language that suggests that they are asking the more basic question here: Are these emergency plans fundamentally adequate? And, if not, what do we need to do about that? And should we be considering shutting down Indian Point, considering its close proximity to New York City and a dense population?

I ask the NRC, if not Indian Point, then what circumstances would compel the NRC to issue a shutdown order? I, too, am alarmed that never in its history has it ordered a shutdown of a nuclear reactor. There has to be instances where it made sense to do so.

In January 2002, Entergy commissioned an internal review of security at Units 2 and 3. The review, known as the Logan Report, revealed that only 19 percent of the guards believe they can repel

a conventional sabotage event, let alone a September 11-type attack.

Guards admitted they are underqualified and undertrained with respect to gun handling, physical fitness and training. Guards report that qualifying exams for carrying weapons are often rigged. Security drills are carefully staged to ensure mock intruders fail. Yet one security guard was able to place mock explosives throughout the spent fuel pool buildings three times, all in less than 1 minute.

In addition to weak ground forces, Indian Point is virtually unprotected from either a water-based or aerial attack. There is no regular Coast Guard presence. The only other protection is a structureless security zone enforced by a buoy tender and an old Whaler piloted by two day Reservists.

The NRC admits that the only way to protect nuclear plants from air attacks is by improving national airport security. However, in response to a 2.206 petition filed by Riverkeeper, the NRC acknowledged that there was a gap between security at Indian Point and at our Nation's airports.

In December, the NRC took the astonishing step of issuing a decision declaring the risk of terrorism will not be considered in issuing or reviewing plant licenses. The NRC claims, "they have no way to calculate the probability proportion of the equation, except in such general terms as to nearly be meaningless." In other words, because you can't accurately measure the threat of terrorism, it is OK to ignore it in determining whether nuclear plants are safely sited and protected. That may be the most bizarre and dangerous rationale for inaction I have ever heard coming from a Federal agency.

The NRC earlier testified that they are not responsible and the plant owners are not responsible for protecting against enemies of the United States. Well, I would ask the question: If that is the case, who is responsible, and which agency of the government, if not Entergy, is responsible for protecting Indian Point?

The New York Observer did an article last year where they asked all of the—they polled all of the Federal agencies—the Defense Department, FBI, CIA, and others—and Entergy—who was responsible ultimately for aerial protection? And they all pointed fingers at each other, and none could say definitively that they were responsible.

On Friday, James Lee Witt Associates issued the final draft of its State commissioned report, in which it criticizes virtually every aspect of Indian Point's emergency plan. The report concludes that, "the current radiological response system and capabilities are not adequate to overcome their combined weight and protect the people from an unacceptable dose of radiation in the event of a release from Indian Point, especially if the release is faster or larger than the typical REP exercise scenario."

Last month, in an attempt to dismiss Witt's devastating conclusions, FEMA issued its own report, first claiming that Witt has raised nothing new, then trying, without success, to rebut Witt's findings. Without ever substantiating its criticism of Witt's arguments, FEMA somehow reaches the conclusion that there is not a single deficiency in Indian Point's emergency plan. Astonishingly,

FEMA insists that there is no difference in responding to a radiological release caused by an operational failure and one caused by a terrorist attack.

However, Witt has a distinctly different view. He cites as examples terrorists simultaneously targeting roads and bridges to impede evacuation, attacks on responders and spontaneous and shadow evacuations spurred by public panic.

To be clear, the NRC recognizes the possibility of a radiological release with or without terrorism in as little as 1 to 2 hours. Yet, while FEMA claims that it takes fast-breaking scenarios into consideration, it fails to plan or drill for such scenarios.

FEMA sidesteps those flaws that Witt identifies as particularly serious: the congested road network and population densities around Indian Point, both of which are fixed givens that cannot be altered. FEMA all but ignores emergency scenarios involving a spent fuel pool disaster. FEMA overlooks Witt's contention that a radioactive plume may travel well beyond the 10-mile EPZ.

FEMA fails to comprehend the significance of the fact that many first responders, having little faith in the emergency plan, have admitted that, rather than fulfilling their official duties, they will seek to protect their own families.

Probably the most damning statement of all in FEMA's report is the Agency's acknowledgment that studies associated with NUREG 0654 clearly indicate that, for all but a very limited set of conditions, evacuation, even evacuating under a plume, is much more effective than sheltering in place. Clearly, if you can't shelter, if you can't evacuate, you can't protect the people.

So what has FEMA's response been to the overwhelming evidence that Indian Point's plan cannot meet our current needs? Finger pointing, bullying and indecision. When counties declare that they could not, in good conscience, certify the plans were up to date, FEMA wrote a letter to the State instructing them to ignore the counties and certify the plans over county objections.

When finally realizing it could not provide reasonable assurance that the plan works, FEMA arbitrarily tacked on a 75-day grace period to the 120 days the State is normally given to comply with certification requirements. We worry that all of the buck passing and delays are being used by FEMA to give them time to figure out how to certify a patently unworkable plan.

We agree with Mr. Witt that the plan should be improved. Certainly, if you make the improvements that he recommends in his report, that will help to address a minor accident at the plant. But we also agree that plans cannot be fixed to deal with the post-September 11 world.

Chairman Shays, in conclusion, I urge you and the rest of the committee to pay close attention to FEMA and the NRC as this process unfolds. If I may, I would like to briefly make several specific recommendations to the committee.

Regarding emergency planning, instruct FEMA to start delaying and immediately withdraw its approval of Indian Point's emergency plan in light of overwhelming evidence and unanimous recognition by independent experts, elected officials and the public that the major deficiencies in the plan cannot be repaired.

In case the committee is not aware, and I think that FEMA made reference to it earlier, or the NRC, FEMA has been faced with this issue in the past and acted appropriately. In the aftermath of Hurricane Andrew in 1992, FEMA not only temporarily withdrew its approval of Turkey Point's emergency plan but ordered the Florida nuclear plant to shut down until reasonable assurances could be made that the plant would actually work.

Given the terrorist threats and clear deficiencies with Indian Point's emergency plan, the situation in New York is clearly more serious.

Congresswoman Kelly, I would encourage you—recently, a theory was proposed in Congresswoman Lowey and Congressman Engel's hearing last week that it might be the case that FEMA and the local counties, in reorganizing the emergency plan, actually have essentially quarantined Westchester, whereas the evacuation routes used to go north into Putnam and east into Connecticut and so forth, all of the routes go south and away from the plant but are contained within Westchester. Who knows what that means?

But it is interesting that, rather than sending people away to less populated areas, they are actually sending you down to more populated areas and, in fact, where the winds are typically blowing.

Regarding Indian Point's security, introduce legislation that would require—

Mr. TURNER. Mr. Matthiessen, if you can conclude.

Mr. MATTHIESSEN [continuing]. That Entergy finance hardening of onsite storage and casks for irradiated spent fuel.

Introduce legislation that would require Entergy finance federalization of military forces at Indian Point and require that the force-on-force test will be conducted at Indian Point to test the actual ability to repel a sophisticated terrorist attack.

And, finally, recognize that perhaps Indian Point is a unique case, and the plant should be shut down.

In 1979, in the wake of the Three Mile Island accident, Robert Ryan, NRC's director of the Office of State Programs stated, I think it is insane to have a three-unit reactor on the Hudson River in Westchester County.

Mr. TURNER. Mr. Matthiessen, your time has expired.

Mr. MATTHIESSEN. Thank you, Mr. Chairman, and thank you, members of the committee.

[The prepared statement of Mr. Matthiessen follows:]



**TESTIMONY OF ALEX MATTHIESSEN**

**Executive Director, Riverkeeper, Inc.**

**U.S. Congressional Subcommittee Hearing on *Emerging Threats: Assessing Public Safety and Security Measures at Nuclear Power Facilities***

**Rep. Christopher Shays, Connecticut  
Subcommittee Chairman**

**Subcommittee on National Security, Emerging Threats, and  
International Relations of the Government Reform  
Committee**

Scheduled for Monday, March 10<sup>th</sup> at 2:00 p.m.

Room 2154 Rayburn House Office Building,

Washington, DC

\*\*\*\*\*

Mr. Chairman and members of the committee:

Thank you for the opportunity to provide testimony on this crucial public health and safety issue affecting millions of people living and working in the populated region surrounding the Indian Point nuclear power plant.

I am Alex Matthiessen, executive director for Riverkeeper, Inc, a non-profit public interest organization with 5,000 members. Riverkeeper's mission is to protect the environmental, recreational, and commercial integrity of the Hudson River, and to safeguard New York City's and Westchester County's drinking water supply. Riverkeeper and its predecessor, the Hudson River Fishermen's Association, Inc., has over 35 years of experience with Hudson River issues, and is a leader in the pursuit of economically viable and ecologically sound power plants.

Riverkeeper is not and has never been an anti-nuclear organization. Our focus is solely on the Indian Point nuclear power plant and the federal policies that affect Indian Point and the communities surrounding the facility. Therefore, our testimony here today will be geared strictly to Indian Point security and emergency planning preparedness and those federal policies that apply to this nuclear power plant.

#### INTRODUCTION

The Indian Point nuclear power plant, located in Buchanan, NY, on the Hudson River, 35 miles north of Times Square in New York City, is situated in the midst of the densest population surrounding any U.S. commercial reactor site. Approximately, twenty million people live within a 50-mile radius of Indian Point. Due to its proximity to the nation's major population nucleus, financial center and transportation hub, Indian Point is a unique case that deserves special attention.

In 1979, in the wake of the Three Mile Island meltdown, NRC's Director of the Office of State Programs, Robert Ryan stated that:

“I think it is insane to have a three-unit reactor on the Hudson River in Westchester County, 40 miles from Time Square, 20 miles from the Bronx. And if you describe that 50-mile circle, as I said before, you've got 21 million people. And that's crazy. I'm sorry. I just don't think that that's the right place to put a nuclear facility.”

If the location of Indian Point was called into question two decades ago, then post September 11<sup>th</sup> we really need to question Indian Point's proximity to such a densely populated area. Clearly, today, we would not site Indian Point this close to the New York City metropolitan area.

The bottom line for this public health and safety issue is that the risks associated with Indian Point far outweigh the benefits. There is no question that the risks are significant and the consequences catastrophic.

Since the attacks of September 11<sup>th</sup>, legitimate concerns have been raised by the public and elected officials regarding security lapses and poor security defenses at Indian Point. Valid concerns have also been raised about the inability of the emergency preparedness plan to protect the public in the event of a radioactive release from Indian Point.

Concerns about Indian Point being a potential terrorist target and deficiencies within the plant's emergency plan have garnered further legitimacy especially with the recent release of the draft report by James Lee Witt Associates on emergency planning for Indian Point and the paper issued by the National Research Council which devotes a chapter to nuclear plant security.

Back in July of 2002, the National Research Council released a report<sup>1</sup> stating "nuclear power plants may present a tempting high-visibility target for terrorist attack and the potential for a September 11-type surprise attack in the near term using U.S. assets such as airplanes appears to be high." The report explains that "such attacks could potentially have severe consequences if the attack were large enough."

And now, the findings of the Governor Pataki commissioned Witt Report have reignited concerns about the inability of Indian Point's emergency plan to protect the public from a radioactive release. The long-awaited Witt Report's conclusions are decisive, irrefutable and inescapable. With regard to the "problems" associated with the emergency plan, Witt Associates states that,

"...it is our conclusion that the current radiological response system and capabilities are not adequate to overcome their combined weight and protect the people from an unacceptable dose of radiation in the event of a release from Indian Point, especially if the release is faster or larger than the design basis release."

The report criticized virtually every aspect of the regional evacuation plans, including the planning process, monitoring equipment, the plans' underlying premises, the ability to handle modern terrorist scenarios, communications between local agencies, and the size of the area that would be affected by a successful terrorist attack.

---

<sup>1</sup> The National Research Council's July 2002 report is titled "Making The Nation Safer: The Role Of Science And Technology In Counteracting Terrorism" and it can be viewed at the following website: <http://books.nap.edu/html/stct/index.html>

## I. RADIOLOGICAL EMERGENCY PLANNING

### Critique of FEMA's Approach to Terrorist Threat

The Federal Emergency Management Agency has buried its head in the sand with respect to the threat of terrorism at nuclear power plants. This is best illustrated with the unique and unprecedented situation unfolding with respect to the Indian Point nuclear power plant.

### FEMA's Decision on Indian Point's Evacuation Plan

On February 21, 2003 FEMA refused to certify the Indian Point radiological emergency plans, saying it cannot give "reasonable assurance" that the plans can protect the public from a radioactive release from Indian Point.<sup>2</sup> This first-time event was triggered by yet another unprecedented decision: On January 30, 2003, New York State refused to certify to federal officials that emergency plans for the four counties around Indian Point are up-to-date. The decision by the State Emergency Management Agency to withhold its annual certification now forces the Federal Emergency Management Agency to determine if the Indian Point emergency plans are still effective. The state's decision was prompted by the refusal of the four counties within the EPZ to certify their respective plans to the state. The heightened scrutiny of emergency plans came about when the Governor Pataki-commissioned Witt Associates report was released on January 10, 2003.

From initial reports, it appears that FEMA has established a series of very low hurdles -- delivering signed bus contracts, providing more information on school evacuation, improving systems for information dissemination -- for the state to overcome so that the federal agency can certify the plan for the NRC in May. What seems to be missing from that list is addressing the insurmountable flaws in the plan such as local population densities, fast-breaking radiological emergency scenarios, congested road networks, and the effect of shadow evacuation in areas outside the 10-mile evacuation zone.

Instead of initiating a 120 day period to address the problems in the emergency plan, FEMA gave the state and the counties 75 days to submit to them the requested documents. FEMA's 75-day extension is, clearly, a delay tactic and is jeopardizing the public. It is alarming that FEMA continues to stall in reaching the ultimate and obvious conclusion -- that the plan is inadequate and unfixable. The law is clear: without reasonable assurance that the plan is adequate, the plant must not be allowed to operate. Millions of New York City metropolitan residents are at risk while federal agencies continue to duck the issue.

---

<sup>2</sup> FEMA's regional administrator, Joseph Picciano, in testimony at a March 3, 2003 Congressional forum in Tarrytown, NY hosted by Rep. Nita Lowey, reiterated that FEMA could not provide "reasonable assurance" without having in hand key documents from New York State and the four counties within the emergency planning zone (EPZ).

FEMA report fails to take into consideration:

- The distinction between accident and terrorist triggered emergency scenarios
- An emergency scenario involving a spent fuel pool disaster
- The ability of a radioactive plume to travel well beyond the 10-mile EPZ
- The population density of the region
- The public's distrust of the emergency plan, FEMA and the NRC
- The human behavior component
  - the shadow evacuation effect
  - the spontaneous evacuation within the 10-mile EPZ
- The lack of faith that first responders have in the effectiveness of the plan
- The nature of the region's road system
- The inability to protect the public in the event of a rapid release

I will elaborate on each deficiency:

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the distinction between accident and terrorist triggered emergency scenarios

Clearly, an emergency response to a terrorist attack would be unique and would impede first responders. Contrary to the NRC, FEMA and Entergy's unfounded claims, there is an important distinction between the consequences of spontaneous accidents and those of terrorist attacks. Aware of this distinction, the independent report issued by former FEMA director James Lee Witt concluded that "the plans do not consider the possible additional ramifications of a terrorist caused release" and "that the current radiological response system and capabilities are not adequate to ... protect the people from an unacceptable dose of radiation in the event of a release from Indian Point, especially if the release is faster or larger than the design basis release."

Although nuclear plant emergency plans are based on a spectrum of possible emergency scenarios, they are heavily weighted toward those in which the containment building or irradiated "spent" fuel pool remains intact and radiation releases occur slowly. Such plans would be ineffective if terrorists breached the containment building or "spent" fuel pool walls with explosives, causing an enormous release before most nearby residents could be evacuated. A well-financed and planned terrorist attack will utilize nuclear engineers who are fully cognizant of the vulnerabilities of a nuclear facility. Reactor shutdown – in conjunction with 1) the reconfiguration of the fuel assemblies so they are less densely packed and 2) the fortification of the high level radioactive waste storage facilities and dry casks – which house the deadly irradiated fuel – will significantly reduce the threat now facing the public.

In addition, a terrorist attack may involve several targets in the region. The current emergency plan does not include a comprehensive response to multiple attacks in the region, which may impair the efficient evacuation of the area. Examples of such attacks include destruction or blockage of the Tappan Zee Bridge, loss of power to passenger railroads, and other events, which deny use of necessary infrastructure. A coordinated

attack designed to effectively send the region into chaos will preliminarily target the communication and transportation infrastructures. This will ensure (A) the region is reduced to mass confusion; (B) residents have vastly reduced means of evacuating; and (C) law enforcement and other first responders are impeded from gaining access to the site. In a coordinated attack scenario, public officials will be uncertain as to where to direct responsive action and first responders will be dispatched to numerous sites, thereby reducing the number available to rapidly reach the Buchanan area.

Also, the current plan fails to adequately address an emergency scenario involving a "multiplier" effect in which a radiological or biological weapon is discharged in the vicinity of Indian Point, interfering with the actions that plant employees could take to prevent a catastrophic release of radiation. Furthermore, during a terrorist attack some on-site plant personnel could be killed and the control room damaged. This would hinder on-site personnel from preventing a situation from evolving into a faster breaking scenario. On-site personnel are key players during a response to a radiological emergency. During a terrorist attack involving biochemical weapons, personnel could be immediately eliminated or rendered immobile.

Furthermore, it is quite possible that the primary and secondary sources of meteorological data could be rendered useless in the event of a terrorist attack. The draft Witt report explains the vital role meteorological data plays during a radiological emergency: "the primary hazard is radiation and the dosage received by people is very dependent on meteorological conditions." According to the draft Witt report: "The primary source of meteorological data at Indian Point is a 400-foot tower located on the top of the containment building for the number 1 reactor. This tower has three instrument packages that measure temperature, dew point, wind speed, and wind direction. Precipitation is also measured near ground level. Data are logged at the tower and transmitted by an auto feed to the Emergency Operations Facility by way of landlines and optical fibers for storage on a mainframe computer. The data logger computes atmospheric stability and finds 15-minute averages for use in selecting the appropriate overlay for the accident impact analysis. A backup source of meteorological data is a tower located approximately 1,200 feet northeast of the primary tower, about halfway between the two power reactors. This tower measures wind speed, wind direction and the variability in the wind direction. The instruments are similar to those on the main tower. A third set of meteorological instruments is located on the top of the Emergency Operations Facility building. (Page 31 of draft Witt report) [Emphasis Added]

Finally, in the event of a fast breaking radiological disaster event, local emergency officials have publicly stated that they may order area residents to shelter in their homes. But, sheltering is not practical in many circumstances and will not adequately protect the public from exposure to radiation. In fact, FEMA recognizes this concern in their February 21, 2003 report on emergency preparedness at Indian Point. On page 6 of Attachment B of the report, FEMA states:

NUREG-0654, Appendix 1 provides guidance on the application of evacuation and sheltering as protective measures for a radiological event.

Information Notice 83-28 was issued on May 4, 1983 to provide additional clarification of the guidance. Following the EPA updated guidance on protective action guidelines and protective actions for nuclear incidents, and more than ten years of drill and exercise experience the guidance was further enhanced and clarified. In 1996, the NRC published Supplement 3 to NUREG-0654.FEMA-REP-1, "Criteria for Protective Action Recommendations for Severe Accidents" Draft Report for Interim Use and Comment. This report states "Since the publication of the original guidance in NUREG-0654, extensive studies of severe reactor accidents have been performed. These studies clearly indicate that for all but a very limited set of conditions, prompt evacuation of the area near the plant is much more effective in reducing the risk of early health effects than sheltering the population in the event of severe accidents. In addition, studies have shown that except for very limited conditions, evacuation in a plume is still more effective in reducing health risks than prolonged sheltering near the plant. Therefore, the NRC and FEMA recommend that the population near the plant should be evacuated if possible for actual or projected severe core damage accidents." [Emphasis Added]

If the emergency plan cannot protect people – in the event of a fast-breaking scenario at Indian Point – through sheltering or evacuating, then FEMA and the NRC are faced with a problem that cannot ever be fixed.

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration a scenario involving a spent fuel pool disaster

The draft Witt report, which did not assess a scenario involving a terrorist attack on a spent fuel pool, did note that Indian Point's radiation monitors "would not directly measure an incident involving spent fuel rods, so another means of determining the release amount would be needed if an accident occurred at one of the spent fuel pools."<sup>3</sup>

This is rather disturbing given the fact that the structures that house the spent fuel pools at Indian Point are substantially less protected than the containment domes are. Furthermore, the irradiated "spent" fuel pools at Indian Point 2 and 3 – which house 600 and 800 tons, respectively – pose an even greater threat due to the quantity of high level radioactive waste stored in each building. A February 2001 NRC report (NUREG 1738) reveals that the loss of life and illnesses from a spent fuel pool release would be significant and long-term health effects would be felt hundreds of miles away.

On average, spent fuel ponds hold five to 10 times more long-lived radioactivity than a reactor core. Particularly worrisome is the large amount of cesium 137 in fuel ponds, which contain anywhere from 20 to 50 million curies of this dangerous isotope. With a half-life of 30 years, cesium 137 gives off highly penetrating radiation and is absorbed in the food chain as if it were potassium. According to the NRC, as much as 100 percent of

---

<sup>3</sup> Page 28 of the Draft Report by James Lee Witt Associates released on January 10, 2003 by New York State Governor George Pataki.

a pool's cesium 137 would be released into the environment in the event of a spent fuel fire.

In comparison, the 1986 Chernobyl accident released about 40 percent of the reactor core's 6 million curies of cesium 137 into the atmosphere, resulting in massive off-site radiation exposures. A single spent fuel pond holds more cesium 137 than was deposited by all atmospheric nuclear weapons tests in the Northern Hemisphere combined.

According to the Institute for Resource and Security Studies, the offsite consequences of a pool fire at Indian Point Unit 2 could render uninhabitable a land area of about 95,000 square kilometers, and a pool fire at Unit 3 could render uninhabitable a land area of about 75,000 square kilometers. For comparison, the area of New York State is 127,000 square kilometers.

In June 2001, the NRC staff reported that terrorist threats against spent fuel pools are credible and cannot be ruled out. "Until recently, the staff believed that the [design basis threat] of radiological sabotage could not cause a zirconium fire. However, [NRC's safety policy for spent fuel storage] does not support the assertion of a lesser hazard to the public health and safety, given the possible consequences of sabotage." In other words, the NRC recognizes the significant risk posed to the public by a spent fuel zirconium fire triggered by sabotage.

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the ability of a radioactive plume to travel well beyond the 10-mile EPZ

Numerous federal reports produced and commissioned by the NRC, federal legislation, and real-life events suggest that radiation released from a nuclear power plant can travel well beyond the 10-mile EPZ.

Evidence:

- The Chernobyl accident suggests that impacts extend tens to hundreds of miles beyond the 10-mile radius. In fact, there were more thyroid cancers in children from a thirty mile radius around Chernobyl than those closer to the plant.
- A February 2001 Nuclear Regulatory Commission (NRC) report, *Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants*, (NUREG-1738) states in Appendix 4, that a release from a spent fuel fire could cause tens of thousands of long-term cancer fatalities within the 50-mile radius of a nuclear power plant.
- In fact, federal regulations already require an ingestion zone<sup>4</sup> within a 50-mile radius of a nuclear power plant.
- The 1982 CRAC-2 report released by a U.S. House of Representatives subcommittee, stated that "increasing the evacuation distance [from 10]

---

<sup>4</sup>The Ingestion Zone is the area within which people could be at risk if they eat or drink contaminated food or water.

to 25 miles could substantially reduce the peak consequences, but the feasibility of a timely evacuation from so large an area is highly questionable.”

- A 1997 Brookhaven National Lab Report (“A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants”) claims that a disaster from a spent fuel pool could cause anywhere from 1,500 to 143,000 cancer deaths and \$800 million to \$566 billion in damage, and could make an area of 1 to 2,790 square miles around the plant uninhabitable. The dramatic range is due to several factors, such as weather conditions, differences in population and the age of the spent fuel. [The Chernobyl accident, which rendered about a thousand square miles uninhabitable (about 100 square miles permanently), released to the environment only a fraction of the radioactive material currently stored at Indian Point. Thus, it is entirely conceivable that a significant radiological release from Indian Point could render a large portion of the New York metropolitan area uninhabitable.]
- Federal legislation, recently passed and signed into law, calls for the distribution of Potassium Tablets within a 20-mile radius of nuclear power plants. This suggests that the area of impact could be beyond the 10-mile EPZ and argues strongly for an extension of the EPZ to at least 20 miles, if not 50 miles.
- Recommendations made by the American Thyroid Association regarding distribution of Potassium Iodide suggests that the area of impact could be beyond the 10-mile Emergency Planning Zone. The American Thyroid Association (<http://lwpes.org/PS/ki.htm>) recommends that:
  - Potassium iodide should be made available to populations living within 200 miles of a nuclear power plant
  - Potassium iodide should be “pre-distributed” to households within 50 miles of a plant

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the population density of the region

The Indian Point nuclear power plant has the densest population within a 10-mile and 50-mile radius of any of the nation’s 70 commercial reactors sites (home to 103 operating reactors). Approximately 300,000 and 20 million people reside, respectively, within a 10-mile and 50-mile radius of Indian Point. NRC and FEMA don’t appear to have any explanation for how to overcome this fundamental problem.

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the public’s distrust of the emergency plan, FEMA and the NRC

The controversy surrounding the certification of the emergency plan has spotlighted the finger-pointing taking place between our local, state, and federal agencies. This will only cast further doubt on the beleaguered FEMA and NRC. The public’s faith in Indian

Point's emergency plan is extremely low. Add to this the doubt the public has in the ability of FEMA and the NRC to protect public health and safety.

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the human behavior component

A radiological emergency is unique, and the public's fear of radiation and the fact that it poses an intangible threat will lead to mass panic. In the wake of the September 11<sup>th</sup> terror attacks, residents in the area are on edge and this would affect their response to a radiological emergency in ways that the emergency plan could not predict or address. Public panic will be substantially heightened in another terrorism attack.

a) **Shadow Evacuation Effect**

The logic behind a radiological emergency plan for a 10-mile EPZ is contradicted by both academic research and the experience at Three Mile Island, which demonstrates there will be significant self-evacuation, or shadow evacuation, outside of the 10-mile zone. Shadow evacuation will impede the evacuation of people within the affected areas of the EPZ.

b) **Spontaneous Evacuation within the 10-mile EPZ**

The draft Witt report notes in the executive summary, "The likelihood of significant spontaneous evacuation within and beyond the ten-mile zone is indisputable, and has serious public safety implications. Planning at all levels of government must reflect this reality." One of the report's major findings is that "The plans do not consider the reality and impacts of spontaneous evacuation." Spontaneous evacuation would impede the evacuation of people within the affected areas of the EPZ

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the lack of faith that first responders have in the effectiveness of the plan

Numerous first responders within and outside of the emergency planning zone have expressed doubt in the emergency plan, in particular with respect to not having the proper protective gear and not being able to reach areas in need of their assistance due to spontaneous evacuation, shadow evacuation and the nature of the road system. Many have admitted, in the event of a radiological emergency at Indian Point, they will seek to protect their own families rather than fulfilling their emergency duties.

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the nature of the region's road system

The unique nature of the road system within and outside of the emergency planning zone would complicate the timely evacuation of area residents. Importantly, this is not a problem that can be fixed.

FEMA and the NRC fail to acknowledge that the current Indian Point emergency plans do not take into consideration the inability to protect the public in the event of a rapid release

Sheltering in the event of a rapid release will not be an effective measure in protecting the public from exposure to radiation. In the event of a fast breaking radiological disaster event, local emergency officials have publicly stated that they may order area residents to shelter in their homes. But, sheltering is not practical in many circumstances and will not adequately protect the public from exposure to radiation. In fact, FEMA recognizes this concern in their February 21, 2003 report on emergency preparedness at Indian Point. On page 6 of Attachment B of the report, FEMA states:

NUREG-0654, Appendix 1 provides guidance on the application of evacuation and sheltering as protective measures for a radiological event. Information Notice 83-28 was issued on May 4, 1983 to provide additional clarification of the guidance. Following the EPA updated guidance on protective action guidelines and protective actions for nuclear incidents, and more than ten years of drill and exercise experience the guidance was further enhanced and clarified. In 1996, the NRC published Supplement 3 to NUREG-0654.FEMA-REP-1, "Criteria for Protective Action Recommendations for Severe Accidents" Draft Report for Interim Use and Comment. This report states "Since the publication of the original guidance in NUREG-0654, extensive studies of severe reactor accidents have been performed. These studies clearly indicate that for all but a very limited set of conditions, prompt evacuation of the area near the plant is much more effective in reducing the risk of early health effects than sheltering the population in the event of severe accidents. In addition, studies have shown that except for very limited conditions, evacuation in a plume is still more effective in reducing health risks than prolonged sheltering near the plant. Therefore, the NRC and FEMA recommend that the population near the plant should be evacuated if possible for actual or projected severe core damage accidents." [Emphasis Added]

If the emergency plan cannot protect people – in the event of a fast-breaking scenario at Indian Point – through sheltering or evacuating, then FEMA and the NRC are faced with a problem that cannot ever be fixed.

## II. NUCLEAR PLANT SECURITY

### Critique of NRC's Approach to Terrorist Threat

When the Nuclear Regulatory Commission ruled in December 2002 that the threat of terrorism cannot be considered when licensing reactors because the risk is too speculative, and that discussing the issue in licensing hearings would give too much information to terrorists and "unduly alarm the public," it was frighteningly reminiscent of equally Orwellian pronouncements issued previously by federal regulators.

The NRC's latest exercise in bureaucracy concerns a reprocessing facility that Duke Energy and other companies are seeking to build in South Carolina to turn weapons plutonium into mixed oxide (MOX) reactor fuel; two existing Duke reactor plants that would use the MOX fuel; a temporary waste-storage project in Utah; and a project to expand fuel storage at the Millstone reactors in Waterford, Connecticut.

In the past, design features at nuclear plants proposed to ensure environmental safety have been available for public scrutiny. But the commission now says that security preparations and characteristics of plants that would bear on the success of a terrorist attack must remain secret, and ruled that terrorism could not be considered under the National Environmental Policy Act, the law that requires the government to issue an Environmental Impact Statement when it takes a major action.

The NRC's December 2002 ruling took note of the attacks of Sept. 11, 2001, but said the proper approach would be to improve security at nuclear sites, on airplanes and around the country generally, rather than to try to determine the environmental effects of "a third-party attack" on a site.

Could it be that the NRC's ruling was partly based on a judgment they may have shared with the National Research Council which, in their July 2002 report<sup>5</sup>, stated that a successful terrorist attack on a nuclear power plant could be a major setback to the civilian nuclear industry? The July 2002 report stated that a terrorist attack "could potentially have severe consequences if the attack were large enough and, were such an attack successfully carried out, could do great harm to the nation's near-term energy security and civilian nuclear power as a long-term energy option." [Emphasis Added]

Clearly, the threat to nuclear power plants is real and Indian Point is arguably one of the more attractive targets in the New York City metropolitan area.

Please consider the following:

- On January 29, 2002, **President Bush** in his State of the Union stated "We have found diagrams of American nuclear power plants [in al Qaeda camps]...."

---

<sup>5</sup> The National Research Council's July 2002 report is titled "Making The Nation Safer: The Role Of Science And Technology In Countering Terrorism" and it can be viewed at the following website: <http://books.nap.edu/html/stct/index.html>

- Then, on September 8, 2002, Britain's Sunday Times quoted two leading members of Osama bin Laden's al-Qaida network as saying the initial plan for the Sept. 11 hijackers had been to crash planes into nuclear power plants in the United States. This had been rejected for fear "it would get out of control," but future nuclear targets were not ruled out. The newspaper was quoting from a documentary by Yosri Fouda, chief investigative reporter for the Arab television station Al-Jazeera, who interviewed Ramzi Binalshibh and Khalid Shaikh Mohammad in Pakistan's port city of Karachi. The date of the interview was not given. The AP picked up this story. ("Masterminds of 9/11 reveal terror secrets," September 8, 2002, Britain's Sunday Times)
- With the recent arrest of Khalid Sheikh Mohammed, a U.S. intelligence report stated that Mohammed "is actively involved in Al Qaeda planning in [the U.S.]...and he has directed operatives to target bridges, gas stations and **power plants** in a number of locations, including New York City." [Emphasis Added] In a March 3, 2003 New York Times article ("Qaeda Suspect Sound Asleep at Trails End Offers No Resistance to Arrest in Pakistan"), it was reported that "intelligence officials said they had penetrated his circle deeply enough in recent weeks to conclude that Mr. Mohammed was actively planning for terror operations inside the United States in the 'near term' as one official described it." The article went on to report: "One target was again New York City, the officials said, possibly involving the *revival* of a discarded plan that was first discussed in the months before the World Trade Center attacks on September 11, 2001. Mr. Mohammed had then considered attacks on the city's gas stations, bridges, hotels, and **power plants**, the officials said confirming a report in this week's issue of Newsweek." [Emphasis Added] The New York Times recently reported that New York City remains on orange alert.
- The **National Governors Association**, in a September 19, 2002 report states "U.S. nuclear power plants are potential targets for terrorist attacks.... A terrorist attack on a nuclear facility should be viewed like a terrorist attack using a dirty bomb, but possibly more catastrophic due to the volume of nuclear material available for dispersion. ...The effects of a release over the long term could be dramatic unless the area was adequately decontaminated. For instance, the Chernobyl disaster saw an alarming increase in the number of cancer-related illnesses for children 10 years after the release."

The NRC's ruling outraged many nuclear-safety experts, including former commissioner Victor Gilinsky, who complained that at a time when the commission forbids considering terrorism at the Duke MOX plant, "(Attorney General) Ashcroft is changing the Bill of Rights because it is imminent."

Peter A. Bradford, another former NRC member, compared the commission's attitude to its view on hydrogen explosions. Before the 1979 accident at Three Mile Island (which regulators called "a normal aberration" and a "plant transient" rather than use the word

"accident") such explosions were considered impossible. After the one at Three Mile Island, he said, the commission still considered them impossible, "because now that we had had one, we would be too vigilant for another to occur."

"The bottom line is that events that have occurred but that can't be dealt with must still be considered impossible, first because they haven't yet occurred, then because they have," Bradford said.

The commission has historically declined to speculate about terrorist threats against reactors. In the late 80's and early 90's, it fought off arguments that stronger defenses against truck bombs were needed, despite truck bomb attacks around the world. It argued that in the United States no bomb could be assembled without attracting the notice of the police. But in early 1993, terrorists exploded a truck bomb in an underground garage at the World Trade Center, and a man with a history of mental problems drove his station wagon through a gate and into the turbine building at Three Mile Island. The man, who was not armed, then hid inside the plant for hours.

The commission soon revised its rules to cover bombs in small vehicles. But it has yet to institute any rules changes related to the Sept. 11 attacks. Dr. Edwin Lyman, president of the Nuclear Control Institute, a non-proliferation group in Washington, says the commission's reasoning is contradictory. The commission believes it need not consider terrorism, Dr. Lyman points out, because terrorism is "entirely independent of the facility." But he adds that "ignores the fact that the terrorist threat to a facility is surely dependent on where that facilities is sited, i.e. in a remote or densely populated area." And as we all know, of the nation's 103 reactors at approximately 70 sites, Indian Point is situated in the midst of the densest population, 20 million people within a 50-mile radius.

"One of the main threats we face today in the U.S. is that many potentially hazardous facilities are located near heavily populated areas," Dr. Lyman recently told the New York Times. "This situation is tolerated because severe accidents are considered highly improbable. But surely in the future, it makes sense to consider the possibility of terrorist acts that could intentionally cause large releases when making decisions about the location and design features of hazardous facilities."

But the NRC, stuck in mindset based on wishful thinking and still employing a language of euphemism and distortion, disagrees. Saying that it defines risk as a product of the probability of an event multiplied by its consequences, the NRC maintains that when it comes to terrorism and nuclear safety, "we have no way to calculate the probability portion of the equation, except in such general terms as to be nearly meaningless."

With our federal regulators still dedicated more to marketing their nuclear technology to the American public than to protecting the American people from it, their continued reliance on information-management techniques is not surprising. Historically, nuclear regulators have confused hopes with reality, presented expectations and assumptions as facts, covered up damaging information and failed to learn from their mistakes. The implications and consequences for Indian Point are dire.

Add to these concerns, the key finding by a recent survey of 1,525 NRC employees about the “safety culture” within the agency – commissioned by the NRC’s internal watchdog, the Office of Inspector General – that NRC employees are worried that the NRC “is becoming influenced by private industry, and its power to regulate is diminishing.” The survey, which became public in early January 2003, also found that while there had been substantial improvements since the last poll in 1998, there are still major areas of concern. They include:

- Only about half of the agency's employees - 53 percent - feel it is “safe to speak up in the NRC.”
- A growing number of employees - 24 percent, compared with 19 percent in 1998 - don't believe that “the NRC's commitment to public safety is apparent in what we do on a day-to-day basis.”
- Less than half of the agency's staff - 48 percent - think that NRC bosses trust their judgment.
- Only 43 percent feel the NRC is highly regarded by the public.

Coupled with another report from the NRC’s Office of Inspector General that also became public in early January 2003 showing that Nuclear Regulatory Commission staffers didn’t think they had the authority to shut down the Davis-Besse nuclear plant in late 2001 for safety concerns, the findings raise troubling questions about the agency’s self-confidence and its decision-making climate.

One of the main conclusions in the highly critical review conducted by the OIG of Davis-Besse was that the NRC had enough evidence to justify shutting down the Davis-Besse nuclear plant in late 2001 for safety concerns, but the agency let the reactor keep running largely because it didn’t want to hurt owner FirstEnergy Corp. financially.

According to former NRC Commissioner Victor Gilinsky: “You wouldn’t know it from the bland pronouncements of the Nuclear Regulatory Commission (NRC), but the U.S. nuclear industry just had its closest brush with disaster since the 1979 Three Mile Island accident. The Davis-Besse nuclear power plant, located about 30 miles east of Toledo, Ohio, was operating with a rust hole in the top of its reactor pressure vessel -- a hole wide and deep enough to put your fist into. All that was left to contain the reactor's highly pressurized supply of cooling water around the reactor core was a three-eighths inch liner of stainless steel, and the liner had started to bulge ominously. If the liner had burst, it would have drained cooling water vital for safety and also threatened the reactor's emergency shutdown system.”

#### **Weak Security Measures at Indian Point**

Currently, security measures at Indian Point are not capable of withstanding a coordinated attack of the kind that occurred on September 11<sup>th</sup>. Entergy will not and cannot guarantee the plant's security against an attack the magnitude of that on September 11<sup>th</sup>. And what has become obvious over the last year and half is that no single agency is

ultimately responsible for protecting the plant from a terrorist attack. It is unclear just who is ultimately responsible for defending a nuclear plant in an emergency. The Nuclear Regulatory Commission. Entergy. The Department of Defense. The Department of Homeland Security. The Federal Aviation Administration. The Coast Guard. C.I.A. F.B.I. New York State Police. Just who is responsible, depends on the type of attack.

Security at Indian Point nuclear plant continues to be disturbingly lax despite information that Al Qaeda terrorists originally had planned to target a nuclear power plant and that terrorists have not ruled out striking a U.S. nuclear facility in future attacks.

Prior to Indian Point-3 security officer Foster Zeh going public in December 2002 with his concerns about inadequate security at the nuclear facility, there were a number of security lapses that occurred over the course of that year, starting in January 2002:

- In January, three would-be turkey hunters stumbled unwittingly and undetected into a low-security section of the plant. The hunters, all in their early 20s, were charged with trespassing.
- In March, it was reported that one of the security guards pulled his gun on a colleague at Indian Point 2 in an apparent joke. His supervisor did not report the incident until several hours later. Both men were later fired.
- In June, a local fireman gained access to the plant and drove around the grounds unfettered for several minutes. It was later discovered that the plant did not have surveillance cameras at the gate through which the fireman entered.
- On September 11, Entergy reported that a semi-automatic handgun belonging to the Wackenhut security company was missing from the IP-2 unit. Months later, the gun remains missing and the investigation continues.
- In September, Riverkeeper's patrol boat captain spoke with two unarmed naval militiamen in an 18-foot whaler who had been assigned to protect the plant from a water attack. The poorly-maintained 18-foot whaler with the unarmed guards broke down on the way back to the plant after checking the identification of the patrol boat captain.
- A potential act of sabotage occurred at Indian Point 3 on December 12, 2002. Officials at Indian Point 3 and the Nuclear Regulatory Commission initiated an investigation into how a pump used to provide the nuclear reactor's coolant was manually turned off. The FBI was called in to conduct an investigation. Referring to the pump, Michael Kansler, chief operating officer of Entergy Nuclear Northeast, stated: "We found it in a position it is not supposed to be in, and we are doing our investigation. We are trying to determine why it was mispositioned and why it is not the way it is supposed to be. One possibility is that someone did it deliberately..."
- On January 30<sup>th</sup> and 31<sup>st</sup>, 2003, ABC Eyewitness News ran a two-part series called "Dangerous Lapses: Whistleblowers Speak Out about Indian Point Nuclear Plant." The special report, by The Investigator's Jim Hoffer, featured interviews with a plant security officers and supervisors about their concerns including excessive overtime, poor training, improperly maintained equipment, harassment,

and the improper storage of hazardous materials. Those interviewed conveyed that Entergy's priority appears to be profit-making rather than safety and security.

**Security Guards Speak Out**

According to dozens of security guards at Indian Point, Entergy and Wackenhet have done little to substantially improve security since September 11, 2001. With few exceptions, the problems noted in an internal January 2002 Entergy report still exist today.

The January 2002 internal Entergy report is all the more alarming because it directly contradicts past proclamations – issued by Entergy, the U.S. Nuclear Regulatory Commission, and the State Office of Public Security – that Indian Point is secure. One can only wonder what Mr. Kallstrom was thinking about on Dec. 13, 2001 when he declared Indian Point to be the best defended facility in the nation and brazenly taunted terrorists to attempt an assault on the plant. His statement, troubling then, is more disturbing now given that the next month a security consultant for Entergy delivered his report documenting that only 19 percent of the guard force believed they could successfully defend the plant against a terrorist attack. Indian Point's own security guards have confirmed that Mr. Kallstrom's "expert" assessment was based on a two-hour tour of the facility and assurances from Entergy that security was robust. Worse yet is the attitude of the Nuclear Regulatory Commission, which still has not upgraded its regulations for defending nuclear plants or resumed its exercises for testing guards against mock terrorists.

Foster Zeh, a security officer at Indian Point 3 who has gone public with his concerns regarding weak security, participated in a planned security drill at Indian Point 2 in mid August of this year. During the drill, he was able to gain access to the spent fuel pool building within 60 seconds. In earlier drills, the mock assault team was also able to gain quick access to the spent fuel building – on one occasion, in 36 seconds – and simulate placing explosives throughout the building. Had the mock assault been real, the damage would have been catastrophic. (A February 2001 NRC report - NUREG 1738, reveals that the loss of life and illnesses from a spent fuel pool release would be significant and health impacts would be felt hundreds of miles away.) Regrettably, the NRC did not penalize Entergy or Wackenhet for this poor showing. In fact, the NRC passed Indian Point 2 security with high marks.

In light of the vulnerability of the spent fuel storage buildings, which house much of the high level radioactive material on site, one would expect the highest level of security. However, according to Officer Zeh, these buildings are lacking proper security and are extremely vulnerable to terrorist attack. The radioactive material present in the spent fuel storage buildings pose a clear and present danger to public health and safety and these facilities must be better protected. But, Officer Zeh has explained that no structural upgrades or fortifications have been made to the spent fuel storage buildings at the Indian Point nuclear power station, nor are there any plans to add additional structural fortifications to the spent fuel storage buildings.

Provided below is a summary of the major security lapses and work environment problems at Indian Point identified by an internal Entergy report and by security officers interviewed by reporters and by Riverkeeper:

- Most security guards believe they can *not* defend the plant against a terrorist attack for the following reasons:
  - Guards believe that they are not properly armed with weapons to defeat attackers
  - Guards admit that they are under-qualified and under-trained with respect to gun handling qualifications, physical fitness tests, and training exercises
    - Guards are being hired with very little experience; in some cases guards are hired who meet just the minimum requirement of possessing a pistol permit
    - Guards reported that qualifying exams for carrying weapons had been rigged, in some cases, to ensure guards could pass
  - Guards say that security drills are carefully staged to ensure that mock attackers would be repelled
  - Guards forced to work overtime (i.e. forced to work 6 or 7 straight days involving 12 hour to 16 hour shifts, even when ill)
  - Guards suffer from a high fatigue level
  - Guards have little confidence in their management in correcting past problems
  - Guards suffer from low morale, and do not feel obligated to stand their post in the event of an attack; guards admit that if an attack occurred, they would flee
- The facilities that house the highly dangerous irradiated or "spent" fuel at Indian Point are vulnerable to attack. (A catastrophic release of radioactivity from these facilities would cause thousands of prompt fatalities and injuries.) In a recent exercise at the main reactor campus, one security guard was able to penetrate security on five occasions and was able to carry a mock satchel charge of explosives into the highly radioactive spent fuel pool three times – without being challenged by security
- The Code of Federal Regulations pertaining to safeguards information has been violated numerous times.
- Security guards are being suspended and terminated by Wackenhut and Entergy without proper representation and cause due to the fact that they are bringing serious security concerns to the attention of management
- A "chilled" environment exists at the plant and security guards do not feel safe speaking with management about their concerns

- Entergy Nuclear management have asked security personnel to alter incident reports so that an incident becomes a less serious offense and non-reportable
- Company officials sugarcoat and cover up real problems regarding the missing handgun incident, forging documents, giving guards a third chance to pass re-qualifying tests, watering down mock attack drills
- Numerous recommendations made by guards to improve security have not been implemented resulting in the same problems resurfacing time and again.
- Many demoralizing incidents involving sexism, racism, homophobia and anti-Semitism.

**Fortifying the Storage of Irradiated "Spent" Fuel**

Riverkeeper recognizes the vulnerability of Indian Point's current method of storing irradiated ("spent" or "used") fuel<sup>6</sup> to terrorist attack. Therefore, Riverkeeper calls for the "hardening" of the wet and dry storage for all of Indian Point's irradiated fuel and other radioactive waste at Indian Point to the maximum extent possible. These structures must immediately be hardened to repel entry or penetration into building via air or ground attack. All irradiated fuel older than five years must be moved out of the wet storage (e.g. cooling pools) and into hardened dry cask storage. Stored in hardened on-site storage, the irradiated spent fuel is less vulnerable to a spent fuel fire triggered by accident, sabotage or terrorist attack.

As recommended by industry experts, the remaining spent fuel assemblies in the pool must be reconfigured so that there is more space in between each assembly. The current spacing between fuel assemblies is dangerously close which increases the likelihood of a spent fuel pool fire consuming more fuel and releasing greater amounts of radioactivity. The dry cask storage system must involve the spacing of casks at an adequate distance from one another and the concealing of these casks through the use of berms and other protective measures. Riverkeeper advocates that the irradiated fuel be stored safely on site until an environmentally sound method is developed and suitable storage site determined. The proposed Yucca Mountain storage site is years away from opening and faces numerous legal challenges and scientific hurdles.

---

<sup>6</sup>Currently, the total estimated 1500 tons of irradiated fuel is kept in cooling pools in three separate non-reinforced storage buildings (IP-3's pool holds approx. 600 tons; IP-2's pool holds approx. 800 tons; and IP-1's pool holds less than 100 tons).

**III. PUBLIC BEARS LIABILITY AND BURDEN OF RADIOACTIVE CONTAMINATION**

Entergy would not be held fully responsible in the event of an accident or terrorist-triggered radioactive release from Indian Point. Currently, Entergy's liability is limited by the Price-Anderson Act. Under Price-Anderson, commercial nuclear operators are required to carry only \$200 million in primary insurance. A second level of retrospective premiums in the event of an accident is capped at approximately \$88 million per reactor, for an industry-wide total of approximately \$9.4 billion.

Yet according to a 1982 study, a worst case scenario accident at a U.S. nuclear reactor would result in \$24.8 billion - \$590.4 billion in damages in today's dollars. A 1997 Brookhaven National Lab Report ("A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants") claims that a disaster from a spent fuel pool could cause up to \$566 billion in damage. In addition, the CRAC-2 Report reveals that in the event of a worst case scenario, a meltdown at the Indian Point Unit 2 or 3 reactors could cause \$274 billion (1982 dollars) in property damage, and \$314 billion (1982 dollars) in property damage, respectively. In terms of 2000 dollars, property damage from a Unit 2 meltdown would be estimated conservatively at \$500.5 billion, and property damage from a Unit 3 meltdown would be estimated conservatively at \$573.5 billion -- figures based solely on inflation without factoring the substantial rise in metropolitan area real estate values.

The sizable discrepancy between the coverage available under Price-Anderson and the calculated consequences of severe nuclear incidents leaves the public unprotected and the industry unaccountable in the event of a serious accident. Furthermore, by artificially limiting the liability of nuclear operators, the Price-Anderson Act serves as a subsidy to the nuclear industry in terms of foregone insurance premiums. In addition, all homeowner insurance policies exclude nuclear accidents from coverage, leaving homeowners to bear the risk of Indian Point's operations. In other words, no homeowners policy will cover the loss from contamination which results from a radioactive release from Indian Point triggered by an accident or terrorist attack. Outrageously, residents would still have to pay their mortgages even if their homes are contaminated. No other energy source benefits from this level of subsidy.

Clearly, the Price Anderson Act is central to the survival of the commercial nuclear power industry and is a major subsidy to nuclear plant operators. If the nuclear industry was truly confident in its safety and security, then it would forego the Price Anderson Act. But, that seems unlikely. According to a October 1998 U.S. Nuclear Regulatory Commission report – *The Price-Anderson Act - Crossing the Bridge to the Next Century: A Report to Congress* – "Many nuclear suppliers express the view that without Price-Anderson coverage, they would not participate in the nuclear industry."

Even with the limited liability, commercial nuclear power corporations - like Entergy, Exelon and Dominion - may not have the fiscal fortitude to withstand a catastrophic accident at one of their plants. In the case of catastrophic nuclear accident, anywhere in

the United States, Entergy, by virtue of assuming ownership of several reactors, would be required to put up over \$1 billion as part of a national self-insurance program under the Price-Anderson Act. A significant accident occurring at one of Entergy's 10 reactors could jeopardize the safe operation of Indian Point. In a recent prospectus from the Exelon Corporation the following statement can be found: "We may incur substantial cost and liabilities due to our ownership and operation of nuclear facilities...The consequences of an accident can be severe and include loss of life and property damage. Any resulting liability from a nuclear accident could exceed our resources, including insurance coverages."

#### **IV. CONCLUSION**

In conclusion, I would like to offer the following recommendations:

**Regarding Radiological Emergency Planning:**

- Demand that FEMA stop delaying and immediately withdraw certification for the Indian Point emergency plans in light of the overwhelming evidence that the major deficiencies in the plans cannot be repaired.
- Demand that the NRC recognize that Indian Point is a unique case – given its proximity to a dense population and to New York City, which remains a terrorist target – and order the immediate closure of Indian Point and its safe and orderly decommissioning.

**Regarding nuclear plant security:**

- Introduce legislation that would require the “hardening” of on-site storage facilities and casks for irradiated “spent” fuel. Cost of fortifying the storage of irradiated fuel must be born by nuclear plant operators and not by the public.
- Introduce legislation that would require the federalization of military forces at Indian Point, and perhaps the nation’s other nuclear facilities. The cost of this security upgrade needs to be borne solely by the nuclear plant companies, not by the public.
- Demanding that the force-on-force (OSRE) drill that will be conducted at Indian Point later this year test the ability of Indian Point’s security force to repel a *9/11 type* of terrorist attack – i.e., 20 suicidal terrorists launching a coordinated assault on the plant from multiple directions armed with an array of weapons, working in conjunction with an “active” insider; moreover, Entergy should not be given any more than 72 hours notice that the mock assault is coming.

**Regarding Financial Fitness of Commercial Nuclear Power Corporations like Entergy:**

- Parent corporations should be required to guarantee that plant-owning subsidiaries and affiliates will be provided whatever funds are needed to safely operate and decommission their nuclear power plants.
- Parent corporations should be held fully responsible for the unmet liabilities incurred by both direct and indirect nuclear power plant owning subsidiaries.
- Congress should adopt legislation to assure that costs related to (1) safety and security (2) decommissioning assets and (3) Price-Anderson nuclear accident responsibilities receive priority in bankruptcy proceedings.

- Reactor owners should be required to guarantee payment of their nuclear accident insurance responsibilities under the Price-Anderson Act through surety bonds, letters of credit, sinking funds, or other comparable financial instruments that will be bankruptcy remote. This will assure that public liability claims will be paid up to the limits of the Price-Anderson Act without concern about the financial condition of the industry and without requiring a taxpayer bailout.
- The Nuclear Regulatory Commission should not eliminate the current legal requirement that non-utility corporations must disclose their financial qualifications when applying to re-license nuclear power plants, as the agency has proposed in a recent rulemaking. Instead, the NRC should bolster its disclosure requirements concerning the character of the legal relationships between a parent corporation and its subsidiaries in the event of a bankruptcy, business failure or accident.

Mr. TURNER. Mr. Lochbaum.

Mr. LOCHBAUM. Good afternoon. On behalf of the Union of Concerned Scientists, it is my pleasure to appear before this subcommittee. My name is David Lochbaum. I have been UCS's nuclear safety engineer for the past 6 years. UCS has worked on nuclear plant safety issues for nearly 30 years.

Nuclear plant security has been one of my top three focus areas since 1999. Our attention was drawn to this topic after the NRC discontinued its security tests in July 1998. The security tests featured simulated attacks by mock intruders, sometime just a single person, against the facilities.

The NRC began testing security in 1991. Approximately half of the tests conducted through July 1998 revealed serious problems. Public outcry forced the NRC to reinstate the testing later in 1998. From reinstatement through September 2001, when the NRC once again discontinued the tests, approximately half of the tests revealed serious problems.

While identified and fixed security problems are better than unidentified and uncorrected problems, we would prefer a declining failure rate, indicating that the nuclear industry was taking security seriously and not waiting for the NRC to point out its shortfalls.

On September 10, 2001, the NRC planned to test security at 14 nuclear plants in the upcoming year. All tests were canceled after September 11. The NRC is just now reinstating a modified testing program at four plant sites. Since September 11, the NRC has issued a series of orders requiring security upgrades. For example, access control requirements have been tightened. The NRC now wants to background checks to be completed before workers roam freely inside nuclear power plants. That didn't use to be the case.

The NRC plans two other orders. One proposed order covers security guard working hours. Nuclear plant owners responded to the security orders differently. Some orders—some owners hired more guards. Others owners added few guards and just worked their existing guards longer hours.

The Project on Government Oversight reported last September that some security guards are routinely working six 12-hour shifts in a row. When the NRC sampled security guard working hours last fall after that report, they found guards at seven plants working excessive hours. The proposed order will protect against human performance problems caused by fatigue by limiting the number of working hours.

The NRC's other proposed order deals with training standards for security personnel. The proposed order will reportedly require security guards to demonstrate proficiency with their weapons more frequently and under more realistic conditions.

These orders are essentially links in the security chain. Some orders strengthened existing links. Others added links to the chain. But any chain is only as strong as its weakest link. The testing program remains the best measure of that weakest link. The test looked for weak links and challenged them. The only thing worse than finding a weak link is not finding it. NRC-administered security tests, conducted at least once every 3 years, provide Americans with their greatest protection against nuclear plant terrorism.

Until all nuclear plants have been tested, no one can claim that the terrorism threat is being adequately managed. Until then, we merely have good intentions.

The NRC not only stopped security testing after September 11, it also stopped meeting with public stakeholders on security matters. UCS and other public stakeholders fully accept that September 11 forced rethinking of the information that can be openly discussed.

But as today's hearing clearly demonstrates, there can be responsible public discussions of nuclear plant security issues. The NRC refuses to accept this reality. UCS has proposed a series of ways for the NRC to reengage with public stakeholders in the post-September 11 world. The NRC's repeated refusals to interface with UCS and other public stakeholders is particularly troubling because the NRC does interface with other public stakeholders like the American Nuclear Society.

It is abundantly clear that the NRC is hiding behind lame excuses only to avoid meeting with public stakeholders who might express criticisms, like our group. This is unfair and unacceptable. UCS would greatly appreciate it if this subcommittee would encourage, induce or otherwise force the NRC to reengage public stakeholders on security matters.

The NRC's dismissal of contentions about security or about terrorism and sabotage from its licensing proceedings is based in part on its promises to upgrade security. The net effect of the agency's actions are to exclude the public from intervening on security issues in specific licensing cases and also to exclude the public from participating in generic safety discussions.

As a minimum, the NRC must listen to security concerns from all interested public stakeholders so that the agency has the benefit of broad perspectives while they are making policy decisions.

On behalf of UCS, I wish to thank the subcommittee for conducting this hearing on nuclear plant security and for considering our views on the matter. Thank you.

Mr. TURNER. Thank you.

[The prepared statement of Mr. Lochbaum follows:]



## Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

### Testimony before the Subcommittee on National Security, Emerging Threats, and International Relations on “Emerging Threats: Assessing Public Safety and Security Measures at Nuclear Power Facilities”

On behalf of the Union of Concerned Scientists (UCS), it is my pleasure to appear before this Subcommittee. At this time, no one can say with any certainty that nuclear plant security is adequate, or inadequate, for the simple reason that the Nuclear Regulatory Commission (NRC) stopped testing security after 09/11. In the decade prior to 09/11, nearly half of the NRC's security tests revealed serious problems. Although the NRC has issued several orders intended to upgrade security, the efficacy of these measures is unknown until they are tested. The NRC must test security at all US nuclear plants as expeditiously as possible. We also believe it is important for the agency to re-admit public stakeholders into nuclear plant security policy discussions. The NRC claims that acts of terrorism and sabotage are so speculative that the issue can be excluded from licensing considerations for spent fuel storage expansion and construction of new nuclear facilities. At the same time, the NRC claims that acts of terrorism and sabotage are so real that they must exclude the public from security policy discussions. As a minimum, the NRC must receive input from public stakeholders on security policy issues.

My name is David Lochbaum. After obtaining a degree in nuclear engineering from The University of Tennessee in 1979, I spent more than 17 years in the commercial nuclear power industry, most of that time at operating nuclear power plants in Georgia, Alabama, Mississippi, Kansas, New Jersey, Pennsylvania, Ohio, and Connecticut. I have been the nuclear safety engineer for UCS since October 1996. UCS, established in 1969 as a non-profit, public interest group, seeks to ensure that people have clean air, energy and transportation, as well as food that are produced in a safe and sustainable manner. UCS has worked on nuclear power plant safety issues for nearly 30 years.

Nuclear plant security has been one of our top three nuclear safety topics since 1999. Our attention was first drawn to this topic after the NRC summarily discontinued its force-on-force security tests in July 1998. The tests had been conducted under the NRC's Operational Safeguards Readiness Evaluation (OSRE) program. Each OSRE featured simulated attacks by small groups of mock intruders, sometimes as small as a single person. These simulated attacks determined whether all the elements of the security program (i.e., intrusion detection devices, locked doors, armed responders, etc.) fit together as intended or if seams existed that bad guys might try to exploit. The NRC started checking security with OSRE tests in 1991. Due to resource limitations, the NRC conducted OSREs at each plant about once every eight (8) years. Approximately half of the tests conducted from between 1991 and July 1998 revealed serious security problems.

Public outcry forced the NRC to reinstate the OSRE program later in 1998. From late 1998 through September 2001 when NRC once again discontinued the OSREs, approximately half of the tests revealed serious security problems. While identified and fixed security problems are better than unidentified and uncorrected security problems, the best trend would be a declining failure rate indicating that the nuclear industry was taking security seriously and not waiting for NRC to point out its shortfalls.

**Washington Office:** 1707 H Street NW Suite 600 • Washington DC 20006-3919 • 202-223-6133 • FAX: 202-223-6162  
**Cambridge Headquarters:** Two Brattle Square • Cambridge MA 02238-9105 • 617-547-5552 • FAX: 617-864-9405  
**California Office:** 2397 Shattuck Avenue Suite 203 • Berkeley CA 94704-1567 • 510-843-1872 • FAX: 510-843-3785

March 10, 2003  
Page 2 of 5

On September 10, 2001, the NRC had plans for force-on-force security tests at fourteen (14) nuclear power plants in the upcoming year. All tests were cancelled following the tragic events of 09/11. The NRC conducted no force-on-force tests during 2002. The NRC is just now reinstating a modified OSRE program at four plant sites. The NRC indicated it might test each plant site about once every three years when the OSRE program is fully resumed.

Since 09/11, the NRC issued a series of orders to nuclear plant owners requiring them to upgrade security measures. For example, access control requirements have been tightened. Prior to 09/11, newly hired workers had free and unfettered access to vital areas within nuclear power plants for up to six months while FBI background checks were performed. Sometimes the background checks came back with negative information that required revocation of the individuals' unrestricted access. For some temporary workers hired for refueling outages, the negative reports came back after the workers finished their jobs and moved on to the next assignments. The NRC now requires background checks to be completed before workers, permanent or temporary, roam freely inside a nuclear plant. This is clearly an improvement in security since 09/11.

The NRC plans to issue at least two more orders. One proposed order deals with working hour limits for security force personnel. Nuclear plant owners responded to the security orders differently. Many owners hired more security personnel. Some owners added few additional personnel and instead worked their existing staff longer hours. The Project on Government Oversight (POGO) reported last September<sup>1</sup> that security guards at some nuclear plants were routinely working six 12-hour shifts in a row. When the NRC sampled security force working hours in fall 2002, they found seven (7) sites with excessive working hours by security force personnel. A security guard contacted UCS after he was fired for refusing to work a sixth 12-hour shift because he reported feeling fatigued to the point of exhaustion. The NRC recently admitted this report was not an isolated case. The proposed order intends to protect against human performance problems caused by fatigue by limiting the number of working hours. The proposed order also intends to protect security force personnel from retaliation when they self-declare being unfit for duty due to fatigue.

The other order being considered by the NRC deals with training standards for security force personnel. POGO reported last fall that security guards at several nuclear plants trained with their weapons once a year and then only using stationary targets. The guards expressed concern about their proficiency, particularly if confronted with the very real likelihood of having to hit a moving target under stressful conditions. The proposed order will reportedly require security guards to demonstrate proficiency with their weapons more frequently and under more realistic conditions.

The orders are links in the security chain. Some orders were intended to strengthen existing links. Others added links to the chain. But any chain is only as strong as its weakest link. The force-on-force tests conducted under the OSRE program remain the best measure for that weakest link. The tests specifically look for weak links and challenge them. The only thing worse than finding a weak link is not finding it. NRC-administered force-on-force tests conducted at least once every three years<sup>2</sup> provide Americans with their greatest protection against terrorism involving nuclear power plants. Until all nuclear plants have been tested under the revised OSRE program, no one can credibly claim that the terrorist threat is being adequately managed. Until then, we have merely good intentions.

<sup>1</sup> Project on Government Oversight, "Nuclear Power Plant Security: Voices from Inside the Fences," Washington, DC, September 2002. (Available online at [www.pogo.org](http://www.pogo.org)).

<sup>2</sup> Our recommended frequency is based on two factors: (1) the NRC has indicated in the past that it could support this frequency and (2) the rest of the NRC's reactor oversight process is based on a three-year inspection period.

March 10, 2003  
Page 3 of 5

The tangible value of force-on-force tests is the demonstration that the weakest links in the security chain are strong enough or the identification of sub-par links so they can be fixed. The intangible value of the tests is the greater, and proper, emphasis placed on security. Many of the problems documented in the POGO report stem from security being undervalued by some plant owners. Successful performance in the force-on-force tests will force recalcitrant plant owners to remedy the pay and benefits inequities POGO reported.

The NRC is issuing orders on working hour limits and training standards nearly 18 months after 09/11 due in large part to the agency's unwillingness to listen to input from public stakeholders on security policy matters. POGO's report in September 2002 and the media attention it garnered made the NRC aware of these security problems. The NRC would have known about these, and other, security problems sooner had it simply allowed input from public stakeholders.

We have persistently attempted in good faith to interface with the NRC on this very important policy issue since 09/11, but have been "locked out" time and again. We recognize that the events of 09/11 forced a reconsideration of information that can be openly discussed. The record shows we supported the NRC's reconsideration from the beginning. For example, an NRC security manager left me a voice-mail message on the evening of Friday, September 28, 2001. He reported that a document provided to me by a member of his staff during a public meeting on September 5, 2001, was now considered sensitive material. He asked that it be returned. When I received his message on Monday morning, I promptly complied with his request without question.<sup>3</sup>

But we did not rest with merely returning a single document. Realizing that our files contained literally thousands of documents obtained legally from the NRC prior to 09/11 and that some of these documents might be reclassified, we asked the NRC to let us know when they deemed certain documents or classes of documents to be no longer publicly available.<sup>4</sup> We wanted to make sure that we were not disseminating "old" documents and information extracted from "old" documents that the NRC no longer wanted in the public arena. But the NRC elected not to provide us that guidance.<sup>5</sup>

In fact, our concern about excessive public availability of some plant security information pre-dated 09/11. In May 2001, I found details about security upgrades at the Waterford nuclear plant in Louisiana on ADAMS, the NRC's online electronic library. The information provided details on the nature and location of upgrades to physical barriers (including pictures and specifications) and security guard response locations (including plant lay-out drawings showing guard initial and final positions). I immediately contacted the NRC to question the public availability of this information. Their Region IV office, responsible for the Waterford plant, looked into the matter and decided the information was suitable for public consumption. I disagreed and appealed their decision to NRC headquarters. Upon reconsideration, the NRC agreed with me and removed this security information from the public arena.

Recognizing that the NRC needed time to redraw the line between that information which could be openly discussed and that information which needed to be withheld but having security concerns that we felt the agency needed to understand as they made policy decisions, UCS and the Nuclear Control

<sup>3</sup> Letter dated October 1, 2001, from David A. Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists, to Glenn M. Tracy, Chief – Operator Licensing, Human Performance and Plant Support Branch, Nuclear Regulatory Commission, "Return of Requested Information." Provided as Attachment 1 to this statement.

<sup>4</sup> Letter dated October 11, 2001, from David Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists, to David B. Matthews, Nuclear Regulatory Commission, "UCS Policy on Information Formerly Available from the Nuclear Regulatory Commission." Provided as Attachment 2 to this statement.

<sup>5</sup> Letter dated November 1, 2001, from Patricia G. Norry, Deputy Executive Director for Management Services, Nuclear Regulatory Commission, to David Lochbaum. Nuclear Safety Engineer, Union of Concerned Scientists. Provided as Attachment 3 to this statement.

March 10, 2003  
Page 4 of 5

Institute (NCI) proposed that the NRC, on an interim basis, conduct meetings with the public on security issues similar to those held by their Advisory Committee on Reactor Safeguards (ACRS).<sup>6</sup> The ACRS holds public meetings where they hear presentations from NRC staff, industry representatives, and/or public interest group representatives. The information flow is largely one-way, from the presenters to the ACRS members. The presenters cannot question the ACRS members or otherwise extract information from them. The ACRS members have no obligation to express agreement or disagreement with the presenters during the public meetings. The ACRS members gather the information and consider it when forming their conclusions. UCS and NCI felt the NRC could use this meeting convention to listen to concerns from public stakeholders without undue concern about divulging safeguards/sensitive information. But the NRC denied our proposal.<sup>7</sup>

Understanding that the NRC's hands may very well be tied until it formally decides where the redrawn line is positioned and that UCS has the right to conduct our own meetings in the public arena, we invited the NRC to attend a meeting we would convene on nuclear plant security.<sup>8</sup> We invited the NRC to participate in this meeting to the extent they were comfortable, but as a minimum we hoped they would attend and listen to the concerns expressed by UCS and other non-government organizations. But the NRC declined to attend in any capacity.<sup>9</sup>

The NRC refused our invitation "because of the sensitive nature of the subject matter, we will consider meetings on security with appropriately cleared individuals on a case-by-case basis." This rationale baffled us, because we know that NRC had accepted several invitations to have their security personnel address meetings of the American Nuclear Society (ANS) and the Institute for Nuclear Power Operations (INPO).<sup>10</sup> I know for certain that not every member of ANS attending these meetings had appropriate clearance. So, it appears that the NRC hides behind this screen only when it wants to avoid meetings with groups like UCS. The NRC has clearly divided public stakeholders into two camps: those it will engage and those it will refuse to engage. We are not asking to be transferred to the other camp. We want the NRC to treat all public stakeholders fairly by only having one camp.

Our most recent attempt to interface with the NRC on security was our proposal to have Mr. Paul Blanch represent UCS in security meetings with the NRC.<sup>11</sup> Mr. Blanch obtained a safeguards clearance after 09/11 for work he was performing at the Indian Point nuclear plant in New York. Mr. Blanch, familiar with UCS's concerns about nuclear plant security, graciously agreed to represent UCS in NRC security

---

<sup>6</sup> Letter dated June 10, 2002, from Edwin S. Lyman, President, Nuclear Control Institute, and David Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists, to Chairman Richard A. Meserve, Commissioner Nils J. Diaz, Commissioner Greta J. Dicus, Commission Edward McGaffigan, Jr., and Commissioner Jeffrey S. Merrifield, Nuclear Regulatory Commission, "Request for Resumption of Public Meetings on Security." Provided as Attachment 4 to this statement.

<sup>7</sup> Letter dated July 19, 2002, from Richard A. Meserve, Chairman, Nuclear Regulatory Commission, to David Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists. Provided as Attachment 5 to this statement.

<sup>8</sup> Letter dated October 7, 2002, from Howard Ris, President, Union of Concerned Scientists, to Dr. Richard A. Meserve, Chairman, Nuclear Regulatory Commission. Provided as Attachment 6 to this statement.

<sup>9</sup> Letter dated January 8, 2003, from Richard A. Meserve, Chairman, Nuclear Regulatory Commission, to Howard Ris, President, Union of Concerned Scientists. Provided as Attachment 7 to this statement.

<sup>10</sup> Letter dated November 5, 2002, from Glenn M. Tracy, Director – Division of Nuclear Security, Nuclear Regulatory Commission, to David Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists. Provided as Attachment 8 to this statement.

<sup>11</sup> Letter dated January 24, 2003, from David Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists, to Roy P. Zimmerman, Director – Office of Nuclear Security and Incident Response, Nuclear Regulatory Commission. Provided as Attachment 9 to this statement.

March 10, 2003  
Page 5 of 5

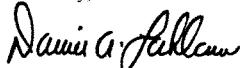
meetings. But the NRC denied this request.<sup>12</sup> The NRC said that Mr. Blanch had a "need to know" while working at Indian Point, he lacked that "need to know" if working with UCS.

A careful examination of the numerous proposals UCS made to NRC clearly shows that UCS is not seeking equal access to information or equal time with NRC. We recognize and fully support the need for NRC to meet behind closed doors with plant owners to discuss sensitive details of security requirements and their implementation. We merely seek an opportunity to articulate our concerns about nuclear plant security to the NRC so the agency can give them due consideration when making policy decisions. The NRC's continued rejection of our proposals and their inability to offer even a single counter-proposal in the 18 months since 09/11 sends us a strong message that the agency has no genuine interest in allowing our involvement in what very well may be the most important public policy issue of this new millennium.

UCS would greatly appreciate it if this Subcommittee would encourage the NRC the re-engage public stakeholders on security policy matters. The NRC's dismissal of contentions about terrorism and sabotage from its formal licensing proceedings is based, in part, on its ongoing efforts to upgrade security. The net effect of the agency's actions are to exclude the public from intervening on security issues in specific licensing cases and also to exclude the public from participating, even in the limited capacity of merely expressing concerns, in security policy discussions. As an absolute minimum, the NRC must listen to and understand concerns by all interested public stakeholders so the agency has benefit of these perspectives while making policy decisions.

On behalf of UCS, I wish to thank the Subcommittee for conducting this hearing on nuclear plant security and for considering our views on the matter.

Sincerely,



David Lochbaum  
Nuclear Safety Engineer  
Union of Concerned Scientists

Disclosure: UCS received \$50,735.69 in FY01 from the US Department of Energy's Wind Market Mobilization Collaborative Program to support our involvement on the National Wind Coordinating Committee and to develop and distribute materials to stakeholders and the general public on the benefits and availability of wind power.

Attachments: As stated in the footnotes.

<sup>12</sup> Letter dated February 23, 2003, from Roy P. Zimmerman, Director – Office of Nuclear Security and Incident Response, Nuclear Regulatory Commission, to David Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists. Provided as Attachment 10 to this statement.



# Union of Concerned Scientists

October 1, 2001

Mr. Glenn M. Tracy, Chief  
Operator Licensing, Human Performance and  
Plant Support Branch - Mail Stop O-6 D17  
Office of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT: RETURN OF REQUESTED INFORMATION**

Dear Mr. Tracy:

Per your voicemail message left on September 28<sup>th</sup>, I am returning the material provided to me by Mr. Terry Reis of your staff during a break of the September 5<sup>th</sup> public meeting on the Safeguards Performance Assessment program.

During a public meeting held on August 30<sup>th</sup> on the Physical Protection Significance Determination Process (PPSDP), I asked for examples of recent security findings so as to be able to compare various PPSDP models that had been proposed. I wanted to do the kind of backtesting that had been done for the Reactor Oversight Program in SECY-00-007. After some discussion, Mr. Alan Madison and Mr. Reis agreed to try to get this information to the stakeholders during the September 5<sup>th</sup> meeting so we would have time to evaluate it in time for a follow-up meeting on the PPSDP scheduled for September 14<sup>th</sup>.

Mr. Reis provided me, Dr. Ed Lyman of the Nuclear Control Institute, and Ms. Lyneette Hendricks of the Nuclear Energy Institute with the information during the September 5<sup>th</sup> meeting. I subsequently used the material to compare the various PPSDP models for the September 14<sup>th</sup> meeting, which has been rescheduled for October 10<sup>th</sup>.

Following the events of September 11<sup>th</sup>, I received numerous calls from reporters asking details about the force-on-force tests conducted by the NRC. My review of the material provided by Mr. Reis indicated that safeguards information apparently had been expunged along with the specific plant site information. Not being a safeguards classification expert and having no reason to suspect that this material contained sensitive information, I provided it to many reporters.

As I hope you know from my bringing the Waterford plant safeguards information matter to NRC's attention earlier this year, I would not have distributed this material had I thought it contained safeguards information. I sincerely did not believe it contained safeguards information.

ATTACHMENT 1  
Page 2 of 2

October 1, 2001  
Page 2 of 2

I take your word on it that this material does indeed contain safeguards information. The many public meetings over the past year have given me the trust and confidence to return this material without challenging your ruling. As you requested in your voicemail message, I have not distributed the material to anyone since receiving your message.

I hope that Mr. Madison and Mr. Reis are not in trouble for having provided me and the other stakeholders with this material. Their actions were a good faith response to my request for information to facilitate stakeholders in the evaluation of changes proposed to the PPSDP to improve its functioning. Everyone was acting with good intentions.

Sincerely,

<Original signed by>

David A. Lochbaum  
Nuclear Safety Engineer  
Washington Office

Distribution:

Ed Lyman (w/o enclosure)  
Alan Madison (w/o enclosure)  
Terry Reis (w/o enclosure)



# Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

October 11, 2001

Mr. David B. Matthews  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT: UCS POLICY ON INFORMATION FORMERLY AVAILABLE FROM  
THE NUCLEAR REGULATORY COMMISSION**

Dear Mr. Matthews:

We know that included in the many efforts undertaken by the Nuclear Regulatory Commission (NRC) following last month's attacks is the review of the safeguards information threshold as it applies to records made publicly available. We also know that the NRC has removed certain material from the public arena until this review is completed. Under the circumstances, we fully understand.

We have in our files considerable information obtained from the NRC either via ADAMS, the website, or the Public Document Room prior to September 11<sup>th</sup>. Some of these files are among the information withdrawn by the NRC from the public arena during its review.

We have been and desire to remain responsible in our use and distribution of information about nuclear safety. If we are notified that the NRC has determined that certain documents, or classes of documents, that were formerly publicly available should be permanently removed from the public arena, we will honor that classification and refrain from using/distributing any copies we obtained. Obviously, we can only use this restraint if we are notified of the results of the NRC's ongoing review.

Therefore, we would appreciate notification—either by individual reply or by receipt of a generic communication—when the NRC determines that the public availability status for specific documents or classes of documents has permanently changed.

Sincerely,

<Original signed by>

David Lochbaum  
Nuclear Safety Engineer  
Washington Office

Washington Office: 1707 H Street NW Suite 600 • Washington DC 20006-3919 • 202-223-6133 • FAX: 202-223-6162  
Cambridge Headquarters: Two Brattle Square • Cambridge MA 02238-9105 • 617-547-5552 • FAX: 617-864-9405  
California Office: 2397 Shattuck Avenue Suite 203 • Berkeley CA 94704-1567 • 510-843-1872 • FAX: 510-843-3785



+12022236162 UCS DC

495 P01/01 MAR 04 '03 11:26

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20585-0001

November 1, 2001

Mr. David Lochbaum  
Nuclear Safety Engineer  
Union of Concerned Scientists  
1707 H Street, N.W.  
Washington, D.C. 20006-3919

Dear Mr. Lochbaum:

Thank you for your letter to David Matthews in which you offered assistance to us regarding the use and distribution of documents that we have removed from public access.

As you know, we have been systematically reviewing information for sensitive content in light of the September 11 terrorist attacks. We have identified certain classes of information that we likely will no longer make available, either on the web or in ADAMS. However, as I'm sure you will understand, we are reluctant to provide information on what types of documents were removed because their identification could lead those with harmful intent to seek them through other means. Moreover, the ongoing review of all our electronic files will likely be a prolonged endeavor, and we may gradually decide to remove additional types of information. Therefore, any list we provide would be incomplete in a relatively short period of time.

We appreciate your concern about the proliferation and distribution of inappropriate information. The addition of information to our web site will alert you to information we believe can be released to the public. As for other documents, we trust you will use your extensive knowledge of NRC activities and your judgment to assess which documents you believe would pose a potential security risk.

Sincerely,

A handwritten signature in black ink, appearing to read "Patricia G. Notary".  
Patricia G. Notary  
Deputy Executive Director for  
Management Services

ATTACHMENT 4  
Page 1 of 2



June 10, 2002

Chairman Richard A. Meserve  
Commissioner Nils J. Diaz  
Commissioner Greta J. Dicus  
Commissioner Edward McGaffigan, Jr.  
Commissioner Jeffrey S. Merrifield  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT: REQUEST FOR RESUMPTION OF PUBLIC MEETINGS ON SECURITY**

Dear Chairman and Commissioners:

Resource limitations usually force non-governmental organizations (NGOs) to avoid duplication of effort by having one NGO take the lead on a concern with other NGOs providing support on an as-needed basis. A compelling sign of how important nuclear plant security issues are to the NGO community is the level of engagement there has been with the NRC on this matter. After the NRC attempted to terminate force-on-force security tests in July 1998, representatives from Greenpeace, the Nuclear Information and Resource Service, Public Citizen's Critical Mass Energy and Environmental Project, and TMI Alert have joined representatives of our organizations, the Nuclear Control Institute (NCI) and the Union of Concerned Scientists (UCS) at many of the NRC public meetings on security issues. While our organizations have slightly different solutions to the security problems we are united in our belief that nuclear plant security needs to be improved and the best way to define and achieve those improvements is in a public forum.

The NRC suspended public meetings on nuclear security following the events of 09/11. We recognize that the agency, and the federal government more broadly, is struggling with where to draw the line between what information can be disclosed in public and what information should remain undisclosed. We hope you recognize that the public's interest in and concerns over nuclear plant security have only been heightened by recent events.

To alleviate growing tension and to facilitate the transition back to more routine NRC public meetings, we urge the Commission to expeditiously direct its staff to initiate interim public meetings on security. The format we propose for the interim meetings is intended to achieve our current primary objective of ensuring that the NRC staff understands the concerns of the NGO community regarding security and is aware of recommendations by the NGOs to resolve those concerns. Our proposed meeting format also supports our current secondary objective of providing an opportunity for the NRC staff to, at its discretion, inform the NGOs about publicly available information on relevant security issues.

ATTACHMENT 4  
Page 2 of 2June 10, 2002  
Page 2 of 2

Specifically, the format we propose for the interim public meetings is patterned after meetings conducted by the Advisory Committee on Reactor Safeguards (ACRS). The ACRS frequently holds meetings where interested parties (NRC staff, industry representatives, NGOs, etc.) are invited to make presentations. ACRS members ask clarifying questions during and following the presentations. In addition, ACRS members ask presenters their thoughts on alternatives to their conclusions and recommendations. But the meetings are not structured to enable the presenters to query the ACRS members.

We propose that the NRC staff play the ACRS role in the interim public meetings. The NGOs could make presentations to the NRC staff about their security concerns and any recommendations for solutions. The NRC staff could ask the NGOs clarifying questions. As with ACRS meetings, all other stakeholders would be welcome to attend the interim public meetings and make statements before the meeting adjourns. This format would not force the NRC staff to agree or disagree with concerns expressed by the NGOs or to disclose whether recommendations made by the NGOs had or had not been incorporated into various NRC orders and advisories. It would also avoid making the NRC staff respond with some version of "no comment" to questions that cannot be publicly answered at this time.

We hope that the Commission will authorize interim public meetings on security using our proposed format or some reasonable facsimile. We believe it is a workable compromise in this uncertain time.

If for some reason the Commission refuses to authorize interim public meetings on security at this time, we request that you consider another alternative. The NGOs could host a series of meetings on security at their offices, with the NRC and other stakeholders (i.e., industry representatives) invited to participate to their own comfort level. As a minimum, we would expect the NRC staff to send one or more representatives to these meetings to listen to the NGO concerns and gather any hand-outs. The NRC representatives would not have to utter a word or even make eye contact. At their own discretion, the NRC representatives would be free to ask clarifying questions of the NGO presenters, read a prepared statement, or make other statements. All of the other stakeholders would be equally free to engage the NGO presenters. But neither the NGO presenters nor the other stakeholders would have the opportunity to query the NRC representatives.

We would also consider hybrid meetings. For example, we could try one or more NGO-hosted meetings. Assuming they met everyone's expectations, they could be supplemented by or replaced by NRC-hosted interim public meetings.

The short-term goal we seek is re-introduction of public input to the NRC on nuclear plant security issues. The long-term goal is resumption of the open dialogue, albeit perhaps with tighter restrictions on the information disclosed, on the issue. We view either of the options outlined above as a way to reach this short term goal and facilitate reaching the long-term goal. We hope the Commission agrees.

Sincerely,

<Original signed by>

Edwin Lyman  
President  
Nuclear Control Institute

<Original signed by>

David Lochbaum  
Nuclear Safety Engineer  
Union of Concerned Scientists

+12022236162 UGS DC

ATTACHMENT 484 F01/01 MAR 04 '03 10:54



CHAIRMAN

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20585-0001**

July 19, 2002

Mr. David Lochbaum  
 Nuclear Safety Engineer  
 Union of Concerned Scientists  
 1707 H Street, Suite 600  
 Washington, D.C. 20006-3919

Dear Mr. Lochbaum:

I am responding on behalf of the Nuclear Regulatory Commission (NRC) to your letter of June 10, 2002, concerning the re-introduction of public input to the NRC on nuclear plant security issues.

As you know, the NRC has maintained a formal policy for communicating with the public and other stakeholders, reflected as a performance measure in the NRC Strategic Plan. The events of September 11, 2001, forced the NRC and other agencies of the Federal government to reevaluate where to draw the line between what information can be discussed in public and what information should remain undisclosed. Public involvement in the regulatory process is necessary, but wide dissemination of certain security related information would not be in the public's interest.

We are currently considering options and formats for communicating with the general public on security matters. I am forwarding your recommendations to the staff for consideration. I assure you that we intend to maintain public involvement in our deliberations and to provide reasonable public access to information, to the extent consistent with our security obligation.

If you have any additional questions regarding this matter, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard A. Meserve".

Richard A. Meserve

T120222Z0102 UGS DL

487 M01/02 MHR 04 103 10:56

ATTACHMENT 6

Page 1 of 2



**Union of Concerned Scientists**  
Citizens and Scientists for Environmental Solutions

October 7, 2002

Dr. Richard A. Meserve, Chairman  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Chairman Meserve:

Thank you for your letter of September 6<sup>th</sup> outlining the nuclear plant security changes enacted and planned in the wake of last year's terrorist attacks. I also acknowledge and appreciate the many long hours expended by you, your fellow Commissioners, and staff developing these changes.

We have a number of additional recommendations for improving nuclear plant security. To highlight some of these recommendations:

- Your letter described the value of enhanced access control in preventing insiders from providing significant assistance to external attackers. These measures could be strengthened further if they were supplemented by actions designed to detect whether insiders have leaked safeguards information to unauthorized persons. Only a small subset of the work force at a nuclear power plant has access to vital information about the plant's physical protection systems and security response plan. Periodic polygraph tests administered to these few workers might reveal (as well as deter) a leak before external attackers receive enough information to plan a successful attack.
- Your letter outlined steps taken to enhance access control to the protected area of a nuclear power plant. In our letter dated November 20, 2001, to Mr. Glenn Tracy of your staff, we provided several recommendations that we believe would further improve access control. For example, we recommended the "two-person" rule for entry into vital areas of the plant, armed security guard escorts when persons with visitors' badges enter vital areas, and a revision to the safety evaluations performed under 10 CFR 50.59 to explicitly require a determination whether a proposed activity unduly increases the threat of insider sabotage.
- Small video cameras used at nuclear power plants today are outward looking. Using in-plant cameras to monitor workers in vital areas could significantly reduce the potential for sabotage or tampering of safety equipment.

+12022236162 UCS DC

487 P02-02 MAR 04 '03 10:58

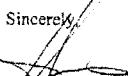
Attachment 6  
Page 2 of 2

Dr. Richard A. Meserve  
October 7, 2002  
page two

- Your letter described new requirements for increased security patrols at nuclear power plants. Despite the hiring of new security guards at many plants, however, it appears that these requirements are being met through chronic reliance on overtime. Five and six 12-hour shifts per week are not uncommon for security personnel week after week. We understand that a rulemaking proceeding on working hour limits currently includes key security personnel within its scope. But it will be many months, if not years, before this rulemaking proceeding produces a final rule. In the meantime, the NRC should clearly communicate its expectations on working hour limits—which are intended to prevent performance impairment caused by fatigue—for key security personnel. We detailed these concerns in our letter dated April 13, 2001, to Mr. Glenn Tracy of your staff.
- We are encouraged to learn that full security performance reviews will be conducted at each nuclear power plant on a three-year cycle rather than the eight-year cycle required up until now. That good news is tempered by the fact that no force-on-force exercises have been conducted in over a year, and, to the best of our knowledge, none are scheduled for the near future. We urge you to correct this deficiency as soon as possible.

I appreciate receiving your status report and the opportunity to provide this feedback. To enhance the exchange of information on this important topic, I would like to invite you, your fellow Commissioners and/or member(s) of your staff, to a meeting at our office in Washington, DC. The meeting, conducted by our nuclear safety engineer, David Lochbaum, would feature short presentations by public interest groups on their security concerns and related recommendations. At your discretion, we would gladly incorporate time into the agenda for you to share your views on the general status of nuclear plant security. By the end of the meeting we would hope to have provided you with a clear picture the public interest community's concerns about nuclear plant security.

Please contact David Lochbaum in our DC office at (202) 223-6133 if you would like to proceed with the idea of having a meeting. We would be pleased to set it up for a mutually convenient time. Thank you again for your letter updating us on recent NRC actions in the security area.

Sincerely,  
  
Howard Ris  
President

cc: David Lochbaum, Nuclear Safety Engineer 



+12022235162 DCS DC

4777 P01 MMH 04 '03 10:44

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20585-0001

ATTACHMENT 7  
Page 1 of 2

January 8, 2003

CHAIRMAN

Mr. Howard Ris, President  
Union of Concerned Scientists  
Two Brattle Square  
Cambridge, Massachusetts 02233-9105

Dear Mr. Ris:

I am responding on behalf of the U.S. Nuclear Regulatory Commission (NRC) to your letter of October 7, 2002, concerning security at the Nation's nuclear power plants. In your letter, you recommended measures to improve security and invited me, my fellow Commissioners and/or members of the NRC staff to a meeting at the offices of the Union of Concerned Scientists (UCS) in Washington, D.C., to discuss these recommendations.

Your letter contained several recommendations which will be considered in future revisions of security requirements. However, one of your recommendations will not be pursued. Specifically, you recommended periodic polygraph tests for licensee employees with access to sensitive Safeguards information in order to determine whether they have provided that information to unauthorized persons. While I acknowledge that some U.S. Federal Agencies involved with security matters conduct polygraph tests of their own employees, the use of polygraph tests remains a very controversial subject with serious questions raised concerning the reliability of the results. Therefore, the NRC does not intend to pursue the use of polygraph tests unless more definitive evidence regarding their effectiveness is identified.

You referred to a letter of November 29, 2001, from UCS to Glenn Tracy, Director of the NRC's Division of Nuclear Security, in which UCS recommended that the NRC require: (a) a two-man rule for entry into vital areas; (b) armed security guard escorts when persons with visitor badges enter vital areas; and (c) a revision to the safety evaluations performed under 10 CFR 50.59 to require a determination whether a proposed activity unduly increases the threat of insider sabotage. You also recommended that in-plant security cameras be used to monitor workers in vital areas to reduce the potential for sabotage or tampering with safety equipment. As Mr. Tracy indicated in his January 25, 2002 response to your letter, your recommendations were considered when the staff developed the interim compensatory measures (ICMs) that were subsequently imposed on reactor and fuel storage licensees. The ICMs cannot be described here since they are sensitive Safeguards information. However, a number of the ICMs are targeted at controlling the threat from an insider, including an employee or a visitor to the facility. The techniques you recommended in your letter are being considered as we develop additional preventive measures to protect against insider activities.

You also referred to a letter of April 13, 2001, to Mr. Tracy, recommending that NRC clearly communicate its expectations regarding oversight of security guard working hours and fatigue. This matter is part of a larger rulemaking effort to establish standards and requirements for working hours for certain employees, including security force members. However, as you noted, revising regulations is sometimes a lengthy process. In the interim, the

+13022236162 UCS DC

477 PB2 MAR 04 '03 10:45

ATTACHMENT 7

Page 2 of 2

Howard Ris

-2-

NRC is considering additional ICMs to ensure that security guards are not impaired by fatigue in carrying out their assigned duties.

Your letter also recommended resumption of force-on-force exercises as soon as possible to test licensees' ability to respond to terrorist acts. The NRC has recently conducted a number of tabletop drills with licensees, a step that precedes the conduct of force-on-force exercises. We are currently planning the resumption of NRC-supervised force-on-force exercises in early 2003. Of course, licensees have been conducting their own such exercises as part of the training of guards and the validation of updated security plans.

Lastly, I wish to thank you for the invitation to meet at your Washington, D.C. offices to discuss security matters. As I indicated in my letter of July 19, 2002, to Mr. David Lochbaum of UCS and Mr. Edwin Lyman of the Nuclear Control Institute, the staff has been considering UCS recommendations for discussing security matters with interested stakeholders. I understand that the staff plans to forward its analysis and recommendations to the Commission in the near future. In the meantime, because of the sensitive nature of the subject matter, we will consider meetings on security with appropriately cleared individuals on a case-by-case basis. Please continue to provide comments to the NRC staff; your comments are welcome and appreciated.



Richard A. Meserve

cc: David Lochbaum, UCS ✓  
Edwin Lyman, NCI



T150222Z OCT 02

480 101702 MMR 04 103 10:59

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

Attachment 8  
Page 1 of 2

November 5, 2002

Mr. David Lochbaum  
Nuclear Safety Engineer  
Union of Concerned Scientists  
1707 H Street, Suite 600  
Washington, D.C. 20006-3919

Dear Mr. Lochbaum:

I am writing in response to your e-mail correspondence on August 13, and August 30, 2002, concerning NRC staff participation in recent meetings conducted by the American Nuclear Society (ANS) and the Institute for Nuclear Power Operations (INPO), respectively, and to follow up on our telephone conversation of September 25, 2002. First, I appreciate the candid and informative discussion of your concerns and thank you for your patience while waiting for the opportunity for us to discuss the matter. As you know, our September 10, 2002, plans to address your concerns were unavoidably changed by elevation of the Homeland Security Advisory System threat condition status to Orange (High) on that day.

In correspondence with you on March 22, 2002, I noted that the working level meetings between the staff and members of industry since September 11, 2001, have included discussions of current protective measures and potential vulnerabilities at reactor sites and other nuclear facilities which must be treated as sensitive unclassified Safeguards Information. Your e-mail correspondence of August 30, 2002, cites access to safeguards information which was granted to some employees of the Nuclear Energy Institute. The discussion asks why "...safeguards clearance for a plant site given that person free access for safeguards clearance for all sites." The short, twofold answer is that NRC does not provide a "safeguards clearance," and there is no such blanket access to information. 10 CFR Part 73.1(a)(7) states that "This part prescribes requirements for the protection of Safeguards Information in the hands of any person, whether or not a licensee of the Commission, who produces, receives, or acquires Safeguards Information." Part 73.21(c) further stipulates, in part, that "...Except as the Commission may otherwise authorize, no person may have access to Safeguards Information unless that person has an established need to know" for the information." The language goes on to define groups of persons whose duties would routinely require access to Safeguards Information because they are directly related to the responsibility for performance according to the terms of the license, government, or providing response to requests for assistance in safeguards-related emergency situations. While Part 73.1 makes provision for requirements for the protection of Safeguards Information to extend to non-licensees, Part 73.21 requires Commission approval for access to Safeguards Information by non-licensees who do not fall into the aforementioned groups. The staff is currently exploring options and formats for communicating with the general public including non-governmental organizations.

Such organizations represent facility licensees before the Commission in an advocacy or oversight role with respect to performance of their licensed responsibilities. The agency, therefore, necessarily sponsors clearances for some of their individuals to obtain access to

+12022236162 UOS DC

488 F02/02 MAR 04 '03 11:00

ATTACHMENT 8

PAGE 2 OF 2

Mr. David Lochbaum

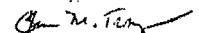
-2-

classified information on a need to know basis; that need being commensurate with fulfilling licensed responsibilities. The clearance process, which involves background and criminal history checks by other agencies, is lengthy and must be prioritized according to the need to know. As you also may appreciate, there is currently a large number of applications being processed. Because some organizations may represent many licensees, their cleared employees may, at times, receive insight into sensitive or classified information pertaining to a number of different sites. Clearance for information related to one site, however, does not automatically convey or imply clearance for all sites. Information dissemination is still controlled by the staff on a need to know basis, and individuals may be asked to leave a meeting or portions of a meeting for which that need to know is not demonstrable.

The NRC continues to consider the staff's participation in industry sponsored conferences, such as those sponsored by ANS, to be an appropriate forum for stakeholder interface and to be an historically effective vehicle for outreach to licensees and their representatives. Interaction on this level unfortunately does not lend itself to the case-specific type of discussion that might be characteristic of a regularly scheduled, working level meeting. The events of September 11, 2001, have not diminished the Commission's commitment to public stakeholder involvement; although they have recast the format and content of certain security-related communication. The Chairman, in his July 19, 2002, response to your request for resumption of security-related interaction between the staff and public stakeholders, confirmed the continuing position of the Commission that public involvement, including non-governmental organizations, in the regulatory process is beneficial; and that the staff is including consideration of your recommendations in its development of options for the Commission's consideration. In the interim, while the staff cannot hold these meetings in a public forum, we remain receptive to written comments, recommendations, and concerns provided by non-licensee stakeholders who do not have access to Safeguards Information.

To the non-licensee public stakeholder, today's restrictions on security-related working level public meetings may be perceived as an inconsistency or as indicative of a "double standard." The former is, perhaps, the situation today; and we are working to inform the Commission of options for improvements in our ability to interact with stakeholders at all levels on these matters. The latter, please be assured, is not the case. I welcome your insights into opportunities for interaction on security-related matters at meetings being hosted by interested non-governmental organizations, consistent with the Agency's security obligation.

Sincerely,



Glenn M. Tracy, Director  
Division of Nuclear Security  
Office of Nuclear Security  
and Incident Response



## Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

January 24, 2003

Mr. Roy P. Zimmerman, Director  
 Office of Nuclear Security and Incident Response  
 United States Nuclear Regulatory Commission  
 Washington, DC 20555-0001

Dear Mr. Zimmerman:

As you know, the Union of Concerned Scientists has considerable interest in the matter of nuclear power plant security. It was one of our top three priorities prior to 09/11 and remains so today. Unfortunately, the tightening of security information that can be openly discussed in public meetings has drastically curtailed our ability to dialogue with the NRC staff on this matter as we had done prior to 09/11. We recognize the need for caution, but I'm sure you can understand our frustration at the situation. We have a proposal to restore access, with proper controls, to the security policy discussions.

Paul M. Blanch has agreed to work with UCS in this area. Paul has been cleared for access to safeguards information at one US nuclear power plant site since 09/11. Since he has already been accepted for access to safeguards information in this instance, he should be acceptable to the NRC in this context as well.

The reason I am confident that Paul can handle this challenge is nearly a decade of experience working with Paul. I first met Paul in 1993. Shortly after I joined UCS in fall of 1996, Paul was retained by Northeast Utilities as a consultant at Millstone. As you recall, Millstone was in the midst of a high-profile restart process with considerable employee concerns issues. Paul and I communicated closely during the ensuing months. We each operated with boundaries on information that we could share with each other. He had information on actions NU had taken or planned to take that he could not share with me. I had information from Millstone workers wishing to remain anonymous that I could not share with him. There were numerous times during our conversations where one or the other said, "I can't answer that," or words to that effect. We respected and honored each other's boundaries and did not engage in a "20 questions" game to "guess" the information the other was withholding. Neither one of us would have properly discharged our duties had we circumvented those boundaries.

Following Millstone, Paul has consulted with several other nuclear power plant owners on employee concerns issues. We have now replicated the Millstone model several times, each with the same success.

It is my expectation that Paul Blanch could interface with the NRC on security policy matters on UCS's behalf. Based on our long track record, I have every confidence that Paul would be able to successfully establish and maintain appropriate boundaries on what information he could share with me from those interfaces. For example, I would expect that Paul would be able to advise me on a qualitative basis if the proposed DBT was sufficient or not without crossing the boundary into quantitative safeguards space.

ATTACHMENT 1  
Page 2 of 2

January 24, 2003  
Page 2 of 2

Basically, I would like the NRC to permit Paul Blanch to:

1. Attend closed public meetings where NRC staff and industry discuss security policy matters.  
NOTE: We are not asking that Paul be granted access to closed meetings between NRC staff and individual licensees where implementation details of security policy at a specific site are discussed.
2. Receive safeguards information on security policy matters (i.e., the documents which are the subject of the policy meetings outlined in No. 1 above).
3. Attend closed Congressional hearings on nuclear power plant security policy issues. NOTE: It is our understanding that it is the NRC who decides who can gain access to these hearings.

I realize this is not a routine request. If it would help you understand this request and the controls Paul and I intend to exercise to ensure that safeguards information is not disclosed, I'd be glad to meet with you and/or appropriate members of your staff to discuss it. We could include Paul by teleconference.

I hope the NRC will accept this proposal. I think it represents a reasonable way to reintroduce public participation into the process while maintaining appropriate controls against release of safeguards/sensitive information.

Sincerely,

<ORIGINAL SIGNED BY>

David Lochbaum  
Nuclear Safety Engineer  
Washington Office

+12022236162 UCS DC

ATTACHMENT 1  
500 P01 MAR 04 '03 15:36

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20585-0001

February 23, 2003

Mr. David Lochbaum  
 Nuclear Safety Engineer  
 Union of Concerned Scientists  
 1707 H Street NW, Ste. 600  
 Washington, DC 20006-3962

Dear Mr. Lochbaum:

This is in response to your letter dated January 24, 2003, and your suggestions concerning how the U.S. Nuclear Regulatory Commission (NRC) might incorporate non-industry stakeholders in discussions involving safeguards information (SGI). The NRC places great value on the input of public stakeholders, and we will continue to seek that input on security issues when they can be discussed publicly. The recent issue of alleged fatigue among security guards at nuclear power plants is an example. However, most security issues necessarily involve SGI that we are prohibited from disclosing to individuals who have not met the requirements of 10 CFR 73.21, including a proper authorization and a specific "need to know."

We understand the desire to participate in upcoming NRC meetings and discussions to develop security regulations. We are familiar with Paul Blanch's capabilities and expertise; however, we regret that he does not meet the "need to know" standard for access in this instance. The fact that Mr. Blanch was cleared for access to SGI, and had a "need to know" in other instances does not provide a basis for general access to such information. The regulations require us to determine "need to know" on a case-by-case basis, in order to limit dissemination of safeguards information. In addition, the regulations limit access to SGI to select categories of individuals, and Mr. Blanch is not included in any such category.

"Need to know" means, generally, that the individual must have access to specific SGI to perform official duties. Licensee employees and contractors who are responsible for overseeing day-to-day security have a "need to know," as do NRC personnel who inspect security performance and develop applicable requirements. Mr. Blanch does not have official duties that require access to SGI, and thus does not have "need to know."

If you have further questions, please contact me at your convenience.

Sincerely,

*Roy P. Zimmerman*

Roy P. Zimmerman, Director  
 Office of Nuclear Security  
 and Incident Response

Mr. TURNER. I would like to thank each of the panelists for participating in this.

Due to the large number of participants in this panel, our first round of questions will be for 10 minutes for each of the members of the subcommittee.

I want to thank our chairman, Chairman Shays, for his efforts in putting this together. Obviously, taking into context with previous hearings that our chairman has had on the issue of the vulnerability of our nuclear facilities, the information that we have today is certainly very helpful in determining whether or not the threat assessment is actually being translated into action by the appropriate parties.

Mr. Slobodien, my first question is to you. In looking at your testimony in the written portion, you say the most significant point is that an accident at Indian Point plants involving the release of large amounts of radioactivity is extremely unlikely, even in the event of a terrorist attack of the types we have seen on civilian and military targets worldwide. You then go on to talk about the reactor core itself and its protection.

I know you are well aware that the testimony that this committee has received previously and even the statements of our chairman today have indicated that some of the areas of vulnerability that have been identified for each plant is not necessarily related to the core, and yet you continue to dismiss, in your statement any vulnerability or any likelihood of vulnerability of the facility.

That raises a concern on my part, obviously. Because when we look at the NRC or yourselves as operators, we would want a heightened level of concern and activity, not a dismissive level of interest. Can you please describe why you have come to the conclusion that it is unlikely to have the impact that obviously others that have come before this committee describe as significant and real?

Mr. SLOBODIEN. I think that latter point is indeed the most important point. What I am saying here is that the nature of the radioactivity at a nuclear power plant, Indian Point and all other nuclear power plants, is well understood. It is finite. You can't add more to it than what is already there.

An event that has a severe impact is one which releases substantial quantities of that radioactivity. From the nuclear core, we talk about an accident that melts the core. From a fuel pool, we talk about an accident that involves a fuel pool fire. The nature of those accidents is not different whether they are initiated by a mechanical problem or a terrorist, because the radioactivity, the issue at concern, is the same.

The response to those kind of events is a symptom-based response. That is, emergency planners measure the amount of radioactivity, and they take action accordingly to decide on protective action.

So when I say that events are not differentiated based on the initiating event, that is what I mean.

Mr. TURNER. So, in other words, if I can rephrase it, your emphasis is on a large release, not on the fact that a release would be likely; and your testimony doesn't really give us any information as to what you would find not to be a large release.

Mr. SLOBODIEN. Of concern to emergency planners and of concern to public health are large releases. Small releases are not consequential to public health and safety. It takes a very large release of substantial quantities of radioactivity to have a major impact on public health and safety.

Mr. TURNER. OK. Well, major impact.

Now, again, this is an area I am unfamiliar with, but it would seem to me that, since your response planning is evacuation, that the concern level would be one of a release that rises to the level of causing an evacuation.

Mr. SLOBODIEN. Our response plans deal from all of the way from very minor to very major. In the most serious accident, evacuation may be an appropriate and probably is an appropriate response. Sheltering may also be an appropriate response. So we do not disregard in any way that may be happening.

And, in fact, our plans, as you heard from NRC, do take into consideration those kinds of events, ones in which there is a very large release of very massive quantities of radioactivity. That kind of event necessitates actions which may include evacuation, sheltering, movement of people.

Mr. TURNER. Let me get back to what my point is. It seems to me that the whole point of doing the evaluation of the possibility of a terrorist attack on a nuclear facility, what actions need to be taken and the ability of looking at the safety of the public, is to try to avoid its consequences.

Your statement is that at this time it is unlikely that a terrorist attack to a facility would result in a release that would even result in an evacuation.

Mr. SLOBODIEN. Yes. Because in order for a terrorist event to be successful, it would have to do the kind of damage that either melts the nuclear core or, similarly, the fuel in the spent fuel pool. To accomplish that is extremely difficult, even for a well-armed, sophisticated terrorist group. For example—

Mr. TURNER. Wait a minute. Well-armed. But your statement says the type of attacks that we have seen on civilian targets, which includes, of course, the World Trade Center attack. And, again, there are people before you who have testified that, in fact, there is that risk.

Mr. SLOBODIEN. I don't dismiss it, sir. An airplane, for example, the type that was used at the World Trade Center, if it were used as a terrorist weapon, and it is the type which we have seen in the past, so I don't dismiss it, if it were to crash into the reactor containment building, studies have shown that the structure would resist that kind of crash.

In the case of Indian Point, the fuel pools are similar structures with the exception of their roofs, but they are also largely below ground. So they are well protected as well by adjacent buildings and other structures as well as their position from those kind of attacks, the airplane attack.

So I don't dismiss it. In fact, we do indeed consider it.

Mr. TURNER. Well, your statement does appear to dismiss it. It seems, again, that your level of concern is even less than the level of our chairman; and I would hope that, if you had some greater sense of urgency, perhaps then we could look to you for rec-

ommendations or look to your organization's recommendations as to what might need to be done to better prepare or to better protect the public.

Ms. Howard, in your statement, similarly in the written portion, it says, the Witt Report is fundamentally flawed. You cite in that two bases for its flaws, the first being that—an assertion that a terrorist-caused attack might be worse in magnitude than that of merely an accident; and the second being that the issue of emergency management processes would be impacted by the consequences of a terrorist-caused event.

Both of those, as you have heard in the testimony today, are issues where, if there is a terrorist attack, there is an assumption of intent on the part of the perpetrators that is different than the level that you would expect in an accident. That intent would be to cause the maximum amount of release, an accident having no intent, and also that perpetrators might have an ability or a plan to impact the processes by which you have your orderly, planned and public evacuation. But yet you dismiss those. Why?

Ms. HOWARD. For the same reasons that we have heard testimony earlier. From the absolute radioactive inventory, the cause of the event does not create an additional release of radioactivity. We look into the massive release of radioactivity from an accident, regardless of cause.

As Mr. Slobodien has testified, you look at what is the impact and then plan for that impact, as we have continued to review what we need to be doing to protect our national infrastructure and the critical infrastructures. If we should look and decide that we should look at resultant or subsequent impacts of some type of terrorist activity, that needs to be a combined effort between the Department of Homeland Security to look at how we protect our Nation against enemies of the state.

Mr. TURNER. Thank you.

Mr. Tierney.

Mr. TIERNEY. Thank you, Mr. Chairman.

Ms. Howard, I want to ask you about some of the advertisements that—we are going to ask somebody to display them for us—some of the advertisements that your organization ran in 2002. In the early part of 2002, they were in Roll Call and the Hill and the Washington Post down here.

In those advertisements, they stated, and you will see in a moment, that the guards were highly committed, well-trained, well-compensated professionals. Is that the industry's position?

Ms. HOWARD. Yes, it is.

Mr. TIERNEY. What about Mr. Lochbaum's testimony a little while ago and others that we have heard from that tell us that many of these guards are forced to work 72 hours a week? Is that what the industry means by highly committed?

Ms. HOWARD. No. In those particular advertisements we are talking about the individuals themselves and their training. And the training is very clear. As we have attempted to understand what the specific requirements are, in the past, there has been some excessive overtime in some individual facilities. That is being corrected.

The other aspect is that, as you have hired additional guards coming into the industry, we are in the process of training them to meet the competencies of the individuals that you see in these ads. So the individuals that are protecting our Nation's nuclear plants are well trained and well compensated.

Mr. TIERNEY. Well, just the power plant that is near where I live in my district, there is quite a substantial amount of people working significant overtime on that. You are not trying to minimize and say that just a few of the 103 plants have people working 72 hours or other excessive amounts of overtime, are you?

Ms. HOWARD. As additional guards are trained and put on the shift, that overtime will be coming down.

Mr. TIERNEY. What do we say about the fact that only one in four plants—the guards at one in four plants think that they can adequately protect their facility? That still seems to be the case from the people that I have talked to.

Ms. HOWARD. Well, with all respect, I believe that is an interview of some particular individuals. There are some who have been hired who have not received all of the training. They have received training adequate for the positions they have been assigned but may understandably want additional training.

Mr. TIERNEY. Well, Mr. Lochbaum, your group, POGO, interviewed over 150 guards at about half of the plants. Was it accurate to say that the information that you got from those interviews was that most of them were—a significant number of them didn't think that they were adequately prepared to protect their plant?

Mr. LOCHBAUM. That was the Project on Government Oversight that did those surveys. As I understand it, that was their finding.

I think our view on that is—I am not discounting those surveys and those results, but it is hard for an individual to gauge all of the things that go together to form security. That is why we would like to see the testing resumed as quickly as possible, because that is really the proof in the pudding. If you pass the test, it doesn't really matter what the survey results were—high, low or indifferent. You are demonstrating an adequate level. So we think that the security test is the key to having adequate security.

Mr. TIERNEY. Fair enough.

Mr. Slobodien or Mr. Renz, Ms. Howard, from any of you, I would be curious to know, we have reports that the guards, rather than being well compensated, are oftentimes not very well compensated, in fact, sometimes paid as much as \$4 an hour less than custodians. What is being done about that situation, or do you dispute that?

Mr. RENZ. I have no knowledge of that specific example. We believe that they are well compensated. We have seen, in recent weeks, an increased demand in this type of individual that would work that position, whether it is in other fields of security or law enforcement or what have you.

With respect to—just a point of clarification from earlier. The overtime worked—you had a wave, a bow wave, if you will, after September 11. You essentially went into a—protecting the entire site. You staffed high numbers of additional positions. You secured the overall site, not just the protected area, as I mentioned earlier. You then had NRC establishing new thresholds, new requirements.

You then recognized you needed to be supplementing your guard force, because you were working them too much overtime. You then started a hiring process. You then started a training process. And I believe that, at this point in time, that the numbers that were reflective last September of the overtime rates are not reflective today.

Mr. TIERNEY. You know, it is interesting what you are saying. On those advertisements they indicate that we were ready or we were prepared before September 11, and we are prepared now. But what you are telling me is that you weren't prepared before September 11, because you have had to add on all of these additional precautions.

Mr. RENZ. Well, I am telling you that we were prepared for a different standard before September 11.

Mr. TIERNEY. Well, do you think that standard before September 11 included events of the nature of terrorism or the events that happened on September 11?

Mr. RENZ. It did. Absolutely.

Mr. TIERNEY. So you don't believe that any of these extra precautions by the NRC are necessary?

Mr. RENZ. I believe they are incredibly necessary. That is not what I am trying to communicate at all.

Mr. TIERNEY. I guess I am confused. If you thought that you were well protected before September 11—

Mr. RENZ. We live in a different environment.

Mr. TIERNEY. Why do you still think that you need to have all these additional standards done?

Mr. RENZ. Before September 11, we met the existing design basis threat.

Mr. TIERNEY. I understand that. But I just asked you whether or not you thought that was adequate to encompass the terrorism activities, such as the nature of September 11. I thought I heard you say you thought they were.

Mr. RENZ. As we know them today, no.

Mr. SLOBODIEN. If I might address the matter of Indian Point on the question of compensation of security guards. I believe they are very well compensated. In fact, our guards are members of the Teamsters Union. And I am sure you could ask the Teamsters, they bargain well. They are well compensated.

Mr. TIERNEY. As they should.

Ms. Howard, what is your understanding industrywide? What would you say is the standard of pay throughout the industry, the 101 plants?

Ms. HOWARD. The standard of pay, I think, is quite well compensated for this type of work. They are highly trained, and the compensation is added to that. These individuals, many of them are retired military. They have come out of the military and gone to work at our facilities, and therefore pay is commensurate with military pay and the type of work that they are doing.

Mr. TIERNEY. OK. Those advertisements also show us individuals in flak jackets and semiautomatic weapons. When those ads were run back in the early part of 2002, how many of the plants required those items?

Ms. HOWARD. I can't give you the specifics, but Mr. Renz who is in charge of security may.

Mr. RENZ. For Dominion, just for a point of clarification, actually, we were approached by the staff shortly after September 11 to see if we would consider getting vests, light body armor, if you will. And the company agreed to it, and we provided that. I want to say I ordered it within a couple of weeks, I believe, and provided it as soon as it came in with a number of several—in several weeks.

Mr. TIERNEY. OK. But, Ms. Howard, you can't tell us industry-wide on that?

Ms. HOWARD. It varies. It certainly varies industrywide. But we believe those ads were certainly representative at the time and certainly representative now.

Mr. TIERNEY. My time, I am told, is up, but I am going to call on the good spirits of my chairman here to ask one more question, because I do have to leave.

Mr. Matthiessen, you made a point. You talked about who is responsible for defending against the enemies of the United States when they might attack a nuclear reactor. I would like to just hear from left to right here who do we think should share—should have that burden of defending those particular sites, and then who should bear the financial burden of that?

Mr. Wells.

Mr. WELLS. Well, clearly, as I understand it, the Federal Government has a responsibility to define what the threat is going to be in terms of what is going to be thrown at these plants; and then, in turn, the private industry and the licensees have to develop a strategy to figure out a way to counter that threat and hopefully to deliver something that allows them to win. So it is certainly going to be a partnership.

Mr. TIERNEY. But your partnership encompasses the U.S. Government setting the regulations, or the standards, and the industry bearing the burden of meeting them?

Mr. WELLS. That is correct. That is the way we understand it.

Mr. TIERNEY. Thank you.

Mr. Slobodien.

Mr. SLOBODIEN. We clearly have the burden to deal with the kind of threats which have been assigned to us by the Nuclear Regulatory Commission and which will continue to be assigned to us, but threats that are national threats by large armies using sophisticated weapons in large numbers are what we call enemies of the state. That is the responsibility of the Federal Government for defense of the Nation.

Mr. TIERNEY. Where do you put terrorism in that equation?

Mr. SLOBODIEN. Terrorism, there is obviously a point at which we have to defend, and we do defend against terrorist attacks of armed personnel in numbers that are smaller than an army and actually is defined for us. It is not something that we can talk about in a public session.

However, a large military force with many weapons is something that is defined for us as an enemy of the state and is the responsibility of the Federal Government for defense of the Nation.

Mr. TIERNEY. Now, there seems to be a lot that the NRC and the industry don't want to talk about in a public forum. Is there some

premise that the public knowing about this is going to create a problem here?

Mr. SLOBODIEN. We live by a standard called safeguards. It is in the regulations. So there are certain things about which we are not authorized to speak in public session. I think there is a willingness to talk about it in the appropriate forum, but in a public session we are prohibited from making such discussions of the details of our security programs.

Mr. TIERNEY. These are requirements worked out with the NRC and the industry?

Mr. SLOBODIEN. The NRC establishes what safeguards means. You heard Mr. Miller talk about sensitive information, and then he used the term safeguards. That is the term in the civilian sector that we use for our classified information.

Mr. TIERNEY. Thank you.

Mr. Renz.

Mr. RENZ. Specifically with respect to enemy of the state, I think there is overlap in responsibility in repelling the design basis threat and responding or defending against an enemy of the state. Clearly, 10 CFR stipulates that is a Federal responsibility. I look forward to seeing how the Federal Government will evolve to respond or position themselves to take on that responsibility.

Mr. TIERNEY. Thank you.

Ms. Howard.

Ms. HOWARD. Yes. Again, it has to be a partnership between the industry and the responsible entities of government, be it local as well as the Federal Government. Certainly, for the enemy of the state, that should be a Federal responsibility.

We look forward to working with the Department of Homeland Defense as they assess vulnerabilities of all of the critical infrastructure and at some point use the standards that have been established in security as well as emergency preparedness in the nuclear industry over the past 20 years to start programs and other critical infrastructure.

Mr. TIERNEY. I just want to state—when you talk about enemies of the state, where do you put the terrorism factor into that?

Ms. HOWARD. I certainly would put terrorism at the extent that we saw on September 11 into an enemy of the state, as our President has.

Mr. TIERNEY. So you would think that there would not be the final burden of the industry to have to protect its plant against that type of an assault?

Ms. HOWARD. It is the financial responsibility of the industry to meet the Federal requirements of the Nuclear Regulatory Commission under the design basis threat.

Mr. TIERNEY. If the NRC then decided to raise the standards to mean that you had to meet threats of that nature, then you would expect that the industry would have to live up to that and to meet those?

Ms. HOWARD. That is correct.

Mr. TIERNEY. Thank you.

Mr. Matthiessen.

Mr. MATTHIESSEN. I would say that to suggest or to consider federalizing security at our Nation's nuclear power plants would be a

good step in the right direction. It would be a recognition that the current security forces and measures at these plants, and in particular plants like Indian Point where there are high population densities, that would be a good start.

I, too, agree, though, that not only should you federalize these forces, but I do think that the industry should pay at least some portion of the cost of doing that. That should be included in the cost of doing business.

Mr. TIERNEY. Thank you.

Mr. Lochbaum.

Mr. LOCHBAUM. For attacks about the design basis threat level, that is the Federal Government's responsibility. I guess we view the government's insurance of that responsibility by having the Department of Homeland Security run periodic exercises similar to the way that FEMA conducts exercises in the emergency planning arena to make sure that the local, State and Federal authorities are working together. Because the Federal response in Kansas is going to be different than the one at Seabrook, obviously, because of the presence of Coast Guard and Navy, which the Wolf Creek plant in Kansas wouldn't be involved.

Mr. TIERNEY. I guess my comments have been designed to say that design threat basis, I would assume, would be high enough so that the industry would realize that a possible threat would be something of the nature of terrorism, that they would be responsible to then deal with that. But I hear some people here suggesting that perhaps taxpayers ought to take the financial burden of that, or some aspect of it, even though these are profitable private entities.

Mr. LOCHBAUM. Well, up to the design basis, even if it is a terrorist threat, smaller people than the design basis threat level, we think that the plant owner needs to be able to repel that, because they are not going to take a survey saying are you a terrorist group or just a domestic, disgruntled person? They need to be able to defend against that.

Above that, their force is going to be there to be protecting against it, but the government needs to be responsible for protecting above that level.

Mr. TIERNEY. Well, thank you all very much for your testimony today. Thank you, Mr. Chairman, for your kindness in letting me exceed my limits.

Mr. SHAYS. Thank you.

I thank all of you for waiting so long and participating in this hearing.

I want to ask one or two questions. You may say this is kind of stupid, but—maybe I will agree with you at the end—but I want to size up a sense of where this panel is coming from.

I am going to ask each of you this question. I will start with you, Mr. Lochbaum. Should we shut down all of our nuclear plants?

Mr. LOCHBAUM. We don't believe so. We will lose some UCS members, but we don't believe so, not for security reasons.

Mr. MATTHIESSEN. No. As I said before, Riverkeeper is not an antinuclear group, and nor do we believe that every nuclear power plant in this country should be shut down. We do think that those

in particularly high population density areas should be given special scrutiny.

Ms. HOWARD. No.

Mr. RENZ. No, not at all.

Mr. SLOBODIEN. No.

Mr. WELLS. Mr. Chairman, we wouldn't have done a body of work to support that.

Mr. SHAYS. Right. So the bottom line is, this isn't an issue about how we are going to shut down all of our plants.

The next question is, with the sites that we have, we have 104 commercial nuclear power plants operating, 64 sites in 32 States. Of those, are there any that you would shut down, and if so, how many? Mr. Lochbaum.

Mr. LOCHBAUM. I guess our—the way we would see it is, if you run the security test and don't do well on it, then the failure or the bad performance on the security test would warrant a shutdown until that security problem is fixed.

Mr. SHAYS. So one test would be the security test doesn't measure up, and your point to us is they haven't been doing these security tests.

Mr. LOCHBAUM. Right. Nobody knows one way or the other whether the security is adequate or not.

Mr. SHAYS. That was pretty surprising to me, Mr. Lochbaum, because I would think that after September 11 we would have done a lot more, rather than none or very few.

Mr. LOCHBAUM. It was a good idea in peacetime. We would have thought in a heightened threat level it would have been a great idea, but it didn't happen.

Mr. SHAYS. Mr. Matthiessen, of these 104 plants and 64 sites, how many do you think need to be closed?

Mr. MATTHIESSEN. I would personally argue only one, only because I don't know any of the details about any of the other plants. I only know about Indian Point.

I would say, though, that where you have an evacuation plan that just can't work, the Federal regulators have no choice but to shut down the plant. You need to have an operable evacuation plan.

Mr. SHAYS. You would probably suggest that—you mentioned urban areas. So have you done any studies on any other areas?

Mr. MATTHIESSEN. No. Again, we are a local group. We haven't. But I would imagine that Indian Point isn't the only plant located in a densely populated area. I know that there are some around Chicago and other cities.

Mr. SHAYS. Without going through any—just asking each of the four of you, is there any plant that you think in the United States needs to be shut down?

Ms. HOWARD. No, sir.

Mr. RENZ. No.

Mr. SLOBODIEN. When the plans meet the standard in the Federal regulations, their license conditions, and demonstrates so, then the answer is no.

Mr. SHAYS. OK. Mr. Wells.

Mr. WELLS. We have taken no position.

Mr. SHAYS. Thank you.

Mr. Slobodien, as it relates to Indian Point, you would agree that the evacuation plan is wanting somewhat or not?

Mr. SLOBODIEN. No, sir. I think it is—well, all plans, regardless of where they are, merit improvement.

One of the things that is being done in the case of Indian Point is to substantially improve the information in that evacuation planning. So I agree with you that the plans need improvement, and indeed they are being improved.

Mr. SHAYS. Mr. Matthiessen was making the point that in densely populated areas you need to pay closer attention than perhaps not and not have a nuclear power plant there. Is there logic to his argument as you see it, Mr. Slobodien and Mr. Renz and Ms. Howard?

Mr. SLOBODIEN. There are a number of studies by experts, including people such as Dr. Dennis Mallett of the University of Colorado, Dr. John Sorrenson of Oak Ridge Associated Universities, who talk about these kinds of issues; and they point out some things that may be indeed counterintuitive. For example, in high population zones, there are typically a greater extent of infrastructure and response capability. They also look at actual responses in such kind of environments.

I think, therefore, that when one looks at the scientific literature on these questions that you are posing you see that indeed it is possible to effect an evacuation, even in an area such as those around Indian Point.

Mr. SHAYS. I am going to come back and I am going to ask you why you think that Indian Point represents a particular challenge. I tell you why I think it does. I would be curious to know. Mr. Renz.

Mr. RENZ. I was just going to mention that. I believe it is a site-by-site evaluation, as, actually, Mr. Slobodien just said, that you tend to have a higher level of public safety infrastructure for a higher level of populous. It has been my experience, at least.

Mr. SHAYS. Ms. Howard.

Ms. HOWARD. I think it is also important to note that plants are built in areas of high concentration in order to supply the electric load. From our planning and over the years of our planning and actual exercising and then in using these plans in response to non-nuclear emergencies, we have seen that they can be effective. So I don't think that the high population density area is of a concern based on that, as well as what has previously been said about the infrastructure, transportation highway infrastructure, in high population areas.

Mr. SHAYS. I would say, Mr. Slobodien, you used the word "counterintuitive," which is a good way to say it would really strike me as counterintuitive. It has almost put me at a loss of words here, because it is so counterintuitive that it is hard to believe.

Mr. Matthiessen and Mr. Lochbaum, let me ask you this question, and I will have the others respond to it as well. First off, I am not aware of any nuclear plant that has been built in the last 20 or 30 years. What is the last one? How many years ago? Can someone tell me?

Mr. RENZ. There are those built and started in the last 20 years.

Ms. HOWARD. None have actually started construction. The last came on line in the early 1990's.

Mr. SHAYS. But, theoretically, we could still have one built. There is no absolute prohibition. It is just cost and other factors and all of the requirements and regulations make it unlikely, correct?

Ms. HOWARD. Well, yes. There is much interest in building new nuclear plants, both on the part of companies to supply additional electricity going forward as well as on the part of the government in order to assure an adequate supply of nonemitting generation in this country and for energy security and energy diversity. So there are plans for—that we are putting together today.

Mr. SHAYS. Well, let me ask you this, Ms. Howard, first. Given the current NRC siting guidelines, would the NRC license a plant to operate in a densely populated area?

Ms. HOWARD. I think you would have to look at the existing site, the extensive siting guidelines. But I think that certainly that is taken into account. The population density is taken into account.

Mr. SHAYS. As a plus or a minus?

Ms. HOWARD. It is part of a number.

Mr. SHAYS. By the NRC. Not being counterintuitive.

Ms. HOWARD. It is part of a number of factors that are taken into account.

Mr. SHAYS. As a plus or a minus?

Ms. HOWARD. I don't consider it a minus.

Mr. SHAYS. I didn't ask you what you consider. But does the NRC consider it as something that they consider as a plus to have it in a densely populated area, or do they consider it not a place they would recommend?

Ms. HOWARD. I would say a densely populated area is not an area that would be looked favorably for siting of new plants.

Mr. SHAYS. OK.

Mr. Matthiessen, Mr. Lochbaum, do you want to jump in on any of this?

Mr. MATTHIESSEN. Well, yeah. I would just say there is a reason why the NRC's new guidelines would never allow it to site a plant in Westchester County, is precisely because of the population densities around the plant. And do I find it also counterintuitive to suggest that the more sophisticated or larger metropolitan areas that the evacuation planning or safety emergency plan is going to be better. That might be in fact the case, but it doesn't take away from the fact that you also have more congested roads and much more dense populations.

Mr. LOCHBAUM. I don't know anything in the NRC's regulations that would prohibit siting a plant in a densely populated area from a pure regulation standpoint.

I think, to its credit, the NRC's regulations ensure that all people, even if they live in Kansas—or my sister lives close to a plant in the South. Even though it is not a very heavily populated area, I want to make sure that she is protected just as well.

In the NRC's rules, they don't distinguish, they don't say there is not enough of you for us to be concerned about around this plant; and that would be applied no matter where anybody wanted to site a plant in the United States. They would want to make sure that the plant met the appropriate regulations.

I think the focus of this hearing is appropriate. Is FEMA and the NRC applying the right standards to ensure that protective activities could take place if they were needed? That is—if that answer is yes, and we have reasonable assurances that answer is yes, then it doesn't really matter where you site the plant. If we don't know the answer to that question with any certainty, then we need to put the plant out in the boonies somewhere where we are harming as few people as possible.

So I guess that would be my long-winded answer to that question.

Mr. SHAYS. I was just thinking if I lived near this plant, and I wanted an evacuation plan, I could probably go to my wife and finally justify why I should buy an expensive boat. It would probably be the best way, just go upriver.

I just want to—I will come to a conclusion here, Mr. Slobodien, but tell me what—be the person who's going to be candid about the challenges dealing with an evacuation plan about Indian Point in particular, since that happens to be the closest to where my constituents live. I'll start you out. If you're on the east side of the Hudson, you either have to go up to the Tapanzee—I mean, get to the Tapanzee bridge, go to the other bridge north of that, I guess, or head east. The problem if you head east is what?

Mr. SLOBODIEN. The concern of course, is understanding where you might be affected, and let me point out that the predominant windflow directions that are around Indian Point are in the Hudson River Valley, because the topography of the valley, 95 percent of the time the winds flow in the Hudson Valley regardless of the incident wind direction. So people from the east—people on the east and people on the west are at substantially less risk than you might think because of the prevailing weather conditions. The—

Mr. SHAYS. But most of the population is east of the Hudson, correct?

Mr. SLOBODIEN. That is correct.

Mr. SHAYS. And they're not going to likely go west. They're going to have to all go east, correct?

Mr. SLOBODIEN. Correct.

Mr. SHAYS. Isn't one of the challenges that people will be tripping over each other in their effort to get out?

Mr. SLOBODIEN. I think the presumption perhaps that we're operating under is that—and you should tell me—is that all people in the area would have to evacuate. We believe, based on the physics of plumes, that the people who would be affected are really very few because of the nature of the plumes. And if one understands plumes, and this gets back to my point earlier made in my testimony about the need for education and public outreach, when that is clearly understood, when you realize that a plume is like the smoke from a smokestack, it's not different in terms of its shape and size, you may have some confidence about the actions that you can take. It's only when you believe that the whole area is going to be instantaneously or very rapidly affected that you believe that you have to evacuate those large areas. Such is not the case.

So for us, for me in particular, education is critical in this matter. When we understand the hazard, when we understand the nature of the risk, we're better able to deal with it. And I think that

in—so in the example that you point, people living to the east, it's very unlikely that they would have to move at all to avoid the risk. They might choose to move because they would be concerned, but they would not have to.

Mr. SHAYS. Mr. Wells, in your highlights you point out in 2001 GAO reported that over the years NRC had identified a number of emergency preparedness weaknesses at Indian Point II that had gone largely uncorrected, and then in the next paragraph it says, "Since GAO's 2001 report, NRC has found that emergency preparedness weaknesses have continued." So what am I to conclude from those two statements?

Mr. WELLS. You have to have a lot of patience because these problems have been identified many times as early as 1996. They're still being corrected. Some of them are falling off; some of them are being fixed. Some new problems are being found, which is probably a good thing, but of concern is the continuing problems that have been identified over and over again that still seem to don't have a total fix yet. That's of concern.

Mr. SHAYS. I'm going to end with this. I'm going to end with Mr. Bond's answer no; that had he seen the plan, did he know what he and his constituency was supposed to do, and the answer was no. Now, I want each of you to react to that and tell me what that means. Mr. Wells, we'll start with you.

Mr. WELLS. Is there advantage to going first?

Mr. SHAYS. Were you surprised?

Mr. WELLS. No. One would not be surprised. However, I think, as I point out in my statement, finding problems is probably a good thing because it forces attention to be paid to fix things and get things moving toward a more positive direction.

Mr. SHAYS. Mr. Slobodien.

Mr. SLOBODIEN. Given where he lives in New Canaan, CT, I'm not surprised. He is far from the Indian Point plant. He's far from the Millstone plants, which are in Connecticut. His risk, therefore, is extremely low and while in the case of Indian Point he lives within 50 miles, that emergency planning zone is not sized for the purpose of dealing with acute threats.

Mr. SHAYS. I'm going to react it to what you just said, since I happen to be very familiar with the area. It's 24 miles away, and the plan is directing people right through his community.

Mr. SLOBODIEN. I'm not—the plan for Indian Point?

Mr. SHAYS. Yes.

Mr. SLOBODIEN. I'm not aware that's the case. I think it's directed in—to the southeast.

Mr. SHAYS. Southeast. How much further southeast can you go?

Mr. SLOBODIEN. Is he in New Canaan, CT?

Mr. SHAYS. Correct.

Mr. SLOBODIEN. So I think the plan is actually directing people to the south of him, south and east of him, not into Connecticut.

Mr. SHAYS. Not into Connecticut at all?

Mr. SLOBODIEN. The Indian Point—the plans established by—in this case it's Westchester County and Putnam County, would have people moving to—out into eastern Putnam County and southeastern Westchester County.

Mr. SHAYS. OK. And then where do they go?

Mr. SLOBODIEN. At that—then they go where they choose.

Mr. SHAYS. Mr. Slobodien, you had me. I'm thinking you're a sharp guy, but all of a sudden I'm beginning to wonder. I mean, good grief, where do they go after that?

Mr. SLOBODIEN. Well, sir, they don't have to go beyond that point to be out of harm's way.

Mr. SHAYS. And you really believe that they're going to just say, oh, the experts have told me that if I'm 30 miles away, I'm just fine? Do you really believe that? Do you really believe that's what's going to happen?

Mr. SLOBODIEN. If I do my job correctly and get information to the public, and if the NRC and FEMA and others do the same, then the public will have a better understanding of what the hazard is and will act appropriately. Today they may be frightened and act inappropriately.

Mr. SHAYS. So it's your testimony before this committee under oath that no one in Connecticut needs to leave anywhere?

Mr. SLOBODIEN. From—

Mr. SHAYS. From any—a serious destruction of Indian Point does not require anyone from Connecticut to leave?

Mr. SLOBODIEN. I think it would be exceedingly unlikely that anyone living in Connecticut would have to take an action as a result of an accident at Indian Point to avoid acute health risk.

Mr. SHAYS. I was so ready to leave this panel and get on with life here, but is that your view, Mr. Renz?

Mr. RENZ. I think you're asking a science-specific question with respect to Indian Point that I'm not familiar with.

Mr. SHAYS. But I'm asking—it's a community 24 miles away from a major nuclear power plant.

Mr. RENZ. Sure.

Mr. SHAYS. And I just described to you a scenario that this plant has been destroyed, and I'm hearing an expert say folks in Connecticut 24 miles away don't need to be concerned.

Mr. RENZ. I think everybody needs to be concerned. I don't know that based on your definition of destroyed, your worst-case design basis accidents would not have you have any concern at 24 miles from an acute exposure standpoint. There would be, if I understand it, no need for protective actions—

Mr. SHAYS. It's very important for you both to put this on the record because this will be—we'll probably have another hearing just on this whole issue because this fascinates me.

Ms. Howard.

And this may be what you believe, and you may be right. You're the experts, right? But my view is from everything I've learned, it's hard for me to put what you're saying in the context of what you're saying.

Ms. Howard.

Mr. SLOBODIEN. May I offer a suggestion?

Mr. SHAYS. Sure.

Mr. SLOBODIEN. There are documents that describe some of these consequences. Scientific documents such as NUREG 0396, which describes the consequences from a very large release of a very serious accident at a nuclear power plant, and it talks about the radiation exposures and the dose consequences and the health effects,

and it was, in fact, one of the documents that was used to define the size of the emergency planning zone.

Mr. SHAYS. So when I think of something like Chernobyl, I'm just thinking of something totally unrealistic, nothing like that, whatever, that's going to be your view.

Ms. Howard, and I'm going to get down to the other gentlemen. Yes.

Ms. HOWARD. Well, certainly let me comment on your comment on Chernobyl.

Mr. SHAYS. No, not yet. Do the other one first, and then we'll do Chernobyl.

Ms. HOWARD. Again, as Mr. Slobodien just mentioned, there's a scientific basis for the inventory that could be released. The emergency planning area where evacuation or some type of protective action should take place is deemed less than 10 miles. We've kept it at the 10 miles. The 50 miles is from a standpoint of looking at over time and monitoring of any disposition of radioactive isotopes from the standpoint of food or water supply.

Mr. SHAYS. Do you agree with what Mr. Renz and Mr. Slobodien have said?

Ms. HOWARD. Yes, I do.

Mr. SHAYS. That basically the only thing you have to be concerned is what's in the 10 miles, and 24 miles away you don't have a problem? I don't want to put any words in anyone's mouth here because this is heavy stuff.

Mr. RENZ. Point of clarification. One of the assumptions that lays the basis for the 10 miles is that if you plan out to 10 miles, you have an established infrastructure that you can expand upon should the need arise on an ad hoc basis. So the planning—the assumptions do not—

Mr. SHAYS. But Mr. Bond doesn't need to know about that because he is 24 miles away.

Mr. RENZ. You would be advised on an ad hoc basis at the time. I mean, it is so unlikely that you would have protective action outside of—anywhere outside of 10 miles.

Mr. SHAYS. And it's so unlikely that people from that area wouldn't come to New Canaan, which I'm being facetious now.

Mr. RENZ. That's a function of public information, public education—

Mr. SHAYS. It's a function of public reaction to a disaster.

Mr. RENZ. Exactly.

Mr. SHAYS. And you and I know that the public is not going to sit by because two experts came to a panel and said you don't need to be afraid. And if you—if we should be saying to people they don't need to be concerned unless you're 10 miles or in, I just want to make sure that I'm not practicing bad medicine.

Mr. Matthiessen.

Mr. MATTHIESSEN. Yeah. I think it's important to note that a few of the other panelists have made reference a couple times to acute exposure, and I know that Mr. Slobodien in the newspaper around our area in Westchester was quoted as admitting that the evacuation plans for Indian Point really are designed to protect against acute illness; i.e., shorter-term illnesses and then perhaps death within a couple days or a couple weeks. And, in fact, the NRC's

own study as recently as a year or 2 ago cited the effect of a radiation dispersion event as a result of a spent fuel fire, and they said that you would have potentially tens of thousands of long-term cancer-related deaths as far away as 500 miles—up to 500 miles away from a nuclear power plant. So I think that does fly in the face of what these folks are telling us.

Also just to mention about the wind direction, I think that Mr. Slobodien is right that at the lower altitudes the wind does tend to go north or south up and down the Hudson Valley, but the higher altitudes it tends to go west to east, and, therefore, in most cases headed toward Connecticut, sometimes a little north, sometimes a little south.

Mr. SHAYS. Mr. Lochbaum.

Mr. LOCHBAUM. I guess I'm a little skeptical, particularly at—

Mr. SHAYS. Skeptical of what?

Mr. LOCHBAUM. The Entergy claim that only people living within 10 miles would have to take any action for their protection. I think if that were—if there were a strong basis in fact for that, the industry and the NRC wouldn't be before the Congress asking for re-newal of the Price-Anderson Act.

You know, until the industry is willing to back up its words with its money instead of my money, I'm going to remain a little bit skeptical of such claims.

Mr. SHAYS. Refresh me, Price-Anderson Act being?

Mr. LOCHBAUM. Price-Anderson provides Federal liability protection in case of a nuclear power plant accident outside the fences.

Mr. SHAYS. But you know that sometimes people sue even when they don't have a right to, so you understand that in deference to—

Mr. LOCHBAUM. The only thing about Price-Anderson is you don't have to establish fault, you just have to show damage. So it alleviates some of the high burden of lawsuits.

Mr. SHAYS. Well, now, why don't you tell me about Chernobyl. I was in Norway and meeting with scientists telling me that they were actually getting particles, radioactive particles, that were the result of Chernobyl. So tell me about that.

Ms. HOWARD. Well, sir, the design of the Chernobyl facility did not have containment. It also was a graphite moderated core, and, therefore, because of the heat that occurred there, it caught fire, and you had an aerosol effect without any containment, just—

Mr. SHAYS. I understand that part of it. In other words—

Ms. HOWARD. And—

Mr. SHAYS. But it wasn't 10 miles.

Ms. HOWARD. Well, again, you would not have those types of reactors anywhere outside of the former Soviet Union, and they have been changed significantly.

Mr. SHAYS. Right. But I'm really out of my territory here, but we are putting something on the record, and what I want to be clear about is is it your testimony that because of the type of fuel we use, that we only have to be concerned 10 miles; or is it your testimony that because of the way we isolate the fuel, that we only have to be concerned 10 miles?

Ms. HOWARD. It's a combination of the type of design of the facility, the use of containment. So there were many factors that led to

that being an inherently unsafe situation along with the tests that caused the reactor—so that overrode safety systems, and so there are multitudes of differences, and you would never have the type of reactor that the Chernobyl type of reactor is licensed in the Western part of the world.

Mr. SHAYS. Let me—Mr. Chairman, if I could just put on the record my view of what I've heard and say that I know we will followup. I am surprised that we have never—it's appeared we've never temporarily shut down a plant because of a question about an evacuation plan. It would strike me in the history of our experience with nuclear energy and with the various sites around the country, that there would have been some plan that wasn't adequate that would have required us to temporarily shut down. So that's one thing that surprised me.

Another thing that surprised me is that with the experts today from the NRC, that they would basically think that because they tried to anticipate any type of disaster, that even though they didn't anticipate September 11 and what terrorists could do, that if it's a shutdown, it doesn't matter if it's a terrorist—if there's a breakdown, it doesn't matter if it's a terrorist or not. It's the same thing, and I'm struck by the fact that's absurd.

I am surprised by the industry's suggesting that, one, that we only have to be concerned 10 miles, and that may be true, but that I believe that if you're anywhere near that plant, you're leaving. And I will tell you this: If I had a child, or my wife and I were from New Canaan and there was a problem at that plant, I'd be leaving New Canaan faster than you could imagine, and I wouldn't depend on the three of your testimony to make me feel good about it. And maybe that's a weakness on my part, but if I would do that, I bet there are a lot of other people who would, and for Mr. Bond not to be told about a plan and for us in the State of Connecticut not to have a contingency plan to me is pretty alarming.

So I have a lot more questions than I have answers, but, you know, I guess questions are a good way to start this dialog. I have supported nuclear energy. I do support it. I do think, though, we need to have some light-year improvement on how we protect these facilities. I am concerned not what's under the hardened area, the reactor. I'm concerned with the brains, and the brains aren't under the hardened area, and it strikes me that if the brains mean something, if they're not working right, bad things happen.

And so this will be something that we're going to pursue, and I do appreciate the patience of all of you. You're experts, and I don't pretend to be, but there's just something that tells me there's something wrong here, and I'd like to get a handle on it.

Mr. Wells—and I'm going to allow each of you to close up here. Mr. Wells, any closing comment?

Mr. WELLS. Yes, Mr. Chairman. The Congress passed the Government Performance Results—

Mr. SHAYS. Excuse me. With your permission, Mr. Chairman. I've taken over.

Mr. TURNER. Absolutely, Mr. Chairman.

Mr. SHAYS. I'm in the wrong chair to do this. Mr. Chairman, would it be all right if the gentlemen just closed up? Thank you.

Mr. WELLS. Thank you, Mr. Chairman.

The Congress passed the Government Performance Results Act, which had challenged the Federal agencies to establish goals in which they could be measured against for performance. The Nuclear Regulatory Commission—one of the Federal agencies—has four goals. One of those four goals is public confidence. As demonstrated today in this hearing and all the audit work that's been done over time. We look forward to working with the Congress to help the NRC increase and improve its public confidence.

Mr. SLOBODIEN. Thank you, Mr. Chairman.

As we've heard today, this is obviously a very difficult topic, and that leads me to believe that among the two most important things that we in this Nation can do are improve the education and base it on sound science, and I think that those are missions for all of us to take on. We at Entergy certainly intend and are doing that wholeheartedly. Thank you, sir.

Mr. RENZ. I, too, would like to thank you. With respect to public information, the nuclear industry, in my opinion, for 20 years, for over 20 years, has been an open book trying to provide public education in differing venues, and I think you saw it here today, difficulty with sharing information due to restricted information concerns, sensitive information, safeguard information. I think we do have a challenge before us, and that is to be able to effectively educate and inform the public moving forward and maintaining a high level of security at the stations.

I would add one point of clarification to one of the remarks you made, and that was with respect to NRC never shutting down a plant temporarily due to emergency planning. I think Turkey Point was the example raised earlier today, and I do know a number, at least two sites, that were delayed in their initial licensing due to questions regarding the effectiveness of the emergency response plans, and I thank you very much for this opportunity.

Mr. SHAYS. Thank you for putting that on the record.

Ms. HOWARD. Again, I thank the committee and look forward to a continuing dialog, because, just as we've all said, the communication with the public needs to be two-way, and we need to continue to foster a good open sharing of information, and we look forward to coming back to the committee to do that.

Mr. MATTHIESSEN. Thank you, Mr. Chairman. I would just say in summary that I'm concerned that everything that seems so obvious in terms of the problems of security and evacuation planning at Indian Point are not apparently as obvious to FEMA and the NRC. There are over 270 elected officials in New York, Connecticut, and New Jersey who very much want to see this plant close as well as the majority of the local residents in the surrounding area. I do again see Indian Point as a special case, and if there's ever a case for the NRC for the first time in its 30-year history or 40-year history to initiate the shutdown of a nuclear reactor, I think that this is certainty it. And I appreciate very much your support on this issue, and I encourage this committee and others in Congress to continue to scrutinize the NRC and FEMA as we go forward in this Indian Point process.

Mr. SHAYS. Let me just state I've asked for a temporary suspension until a plan is adopted.

Mr. MATTHIESSEN. I understand that, and we appreciate that.

Mr. SHAYS. Thank you.

Mr. LOCHBAUM. I'd like to thank this subcommittee also for holding this hearing and inviting us to participate. It's my understanding at the Turkey Point event, that it was FEMA that kept the plant shut down. The NRC thought that it was OK to restart without the emergency plan. So Turkey Point was the plant, but NRC wasn't the white hat on that. It was FEMA, at least in my understanding of that event. Thank you.

Mr. TURNER. Mr. Chairman, I want to thank you for pursuing this issue. Obviously this is one that goes to the issue of public confidence, and I think there are some serious issues that are raised that need to continue to be fleshed out so we don't have the possibility of important issues being dismissed and so that we look at real ways to address them. So I want to congratulate you on your efforts to continue to pursue this.

With that, we adjourn. Thank you.

[Whereupon, at 6:29 p.m., the subcommittee was adjourned.]  
[Additional information submitted for the hearing record follows:]

**Internet Web Site Resources****Radiation**

Health Physics Society  
[www.hps.org](http://www.hps.org)

U.S. Environmental Protection Agency  
[www.epa.gov](http://www.epa.gov)

**Radiation and Health**

International Agency for Research on Cancer  
[www.iarc.fr](http://www.iarc.fr)

National Institutes of Health  
[www.nih.gov](http://www.nih.gov)

National Cancer Institute  
[www.nci.nih.gov](http://www.nci.nih.gov)

Radiation Effects Research Foundation  
[www.rerf.or.jp](http://www.rerf.or.jp)

United Nations Scientific Committee  
[www.unscear.org](http://www.unscear.org)

National Academies of Science  
[www.nationalacademies.org](http://www.nationalacademies.org)

**Nuclear Issues**

International Atomic Energy Agency  
[www.iaea.or.at/worldatom/](http://www.iaea.or.at/worldatom/)

U.S. Nuclear Regulatory Commission  
[www.nrc.gov](http://www.nrc.gov)

U.S. Department of Energy  
[www.energy.gov](http://www.energy.gov)

**Report for the Record**

**Committee on Government Reform  
U.S. House of Representatives  
June 6, 2003**

On March 10, 2003, the House Committee on Government Reform held a hearing on "Emerging Threats: Assessing Public Safety and Security Measures at Nuclear Power Facilities." Representatives William Janklow and Sue W. Kelly requested that FEMA respond to several statements and or questions regarding Indian Point. The following are FEMA's responses to Representatives Janklow and Kelly.

***Representative William Janklow, South Dakota***

***Statement 1: "It appears letters of agreement have been submitted, but they haven't been finalized."***

**Response 1:** Putnam County submitted updated Letters of Agreement (LOA) to FEMA. Orange and Rockland Counties agreed to FEMA staff visits and, at the Orange County staff assistance visit, the LOAs were provided for review and verification and found to be adequate. At the Rockland County staff assistance visits in May, it was reported that the LOAs were in the process of being updated and were nearly complete. Rockland County has subsequently submitted the 2003 updated plans and procedures, including information on LOAs, to New York State. Westchester County has indicated that it will not make available any information required for FEMA's review, including LOAs.

***Statement 2: "It appears that, as to evacuation, the plans don't yet incorporate data from the updated evacuation time estimate studies that reflect the new demographics as well as the shadow evacuation."***

**Response 2:** On March 20, 2003, the licensee, with a renowned expert on the subject, T.E. Urbanik, conducted a general briefing on Evacuation Time Estimate (ETE) Studies at the Thayer Hotel in Highland Falls, New York solely to explain the methodology for developing ETEs. FEMA, NRC, State and affected county representatives attended this meeting. The Entergy contractor, KLD Associates, also considered to be a top firm in the development of ETE Studies, was hired to complete the ETEs. The KLD Associates Team met independently with the four counties and provided the draft and final ETE studies to them, both orally and in hard copy. As a follow-on to the project, KLD Associates is performing additional studies for the counties, at their request. Work is ongoing with the Counties' law enforcement personnel on updating the Traffic Management portions of the plans, based on the new ETEs. Rockland, Orange and Putnam Counties have all incorporated the updated information on population and time estimates into their plans and procedures. FEMA has not yet fully verified these changes but has begun a review of the Orange and Putnam County plans, and the Rockland County plan will be reviewed when it is received. Again, Westchester County, as indicated above, has not provided any information or any indication as to whether they will incorporate this information.

*Statement 3: "It appears that the joint news conference procedures really don't work very well, but they are working on upgrading them."*

**Response 3:** FEMA is working with the staffs of the licensee, State, and affected counties to improve on the Joint News Center (JNC) procedures. On January 29, 2003, FEMA observed a tabletop JNC exercise to demonstrate the new process and procedures. FEMA provided recommendations to the State and affected counties as a result of this exercise. Although further work is still required, FEMA, State and county officials generally agree that JNC procedures are being adequately addressed.

*Statement 4: "It appears that the procedures for schools in the county are adequate, but that the individual school districts, preschools and day care centers have not yet submitted these plans for FEMA review for consistency and completeness."*

**Response 4:** Not all REP offsite response plans and procedures for the individual preschools and daycare centers have been provided to the FEMA Regional office for review. FEMA has offered technical assistance to the affected counties to assist preschools and daycare centers that lack REP plans and procedures. This is a significant issue in Westchester County, which has the largest school population, since it is unwilling to provide information to FEMA. The issue is compounded because the State, citing "Home Rule," will not intervene in this process at the county level.

*Statement 5: "If they say it is a resource problem because of the number of nuclear plants, how do we fix the problem? What do we do to fix the problem? Or do we ask the terrorist to wait until we can get more resources?"*

**Response 5:** FEMA recently approved \$3.5 million for Hazard Mitigation Grant Program projects for the State of New York, specifically for Indian Point. The projects range from education of the general public in the four affected counties to the development of a Geographical Information System that local officials can use to assess their plans. The Federal funding for these projects is limited by regulation to 75 percent of the project costs. Regarding funding to support local involvement in the REP process, the utility provides funding at various levels across the country. Presently, there are no regulatory controls on the level of funding support, and these amounts are determined in negotiations with the State, counties and utility. In the case of Indian Point, Entergy offered more than an additional million dollars above what it already provided to support the efforts of county governments. Entergy also offered contractual assistance for the development of updated Joint News Center procedures.

A major obstacle in New York State is the State's position that as a "Home Rule" state, it is limited to providing assistance only after a State or federal emergency is declared and that it has no authority to assure that local emergency preparedness planning is adequate. The State's view of its "Home Rule" authorities thus limits its involvement only to supporting FEMA in working with the counties for better and compliant plans.

*Statement 6: "Congresswoman Kelly asked you if you would include in your report some type of an analysis on the communication problem, could I ask you if you would expand on that, please? Let's just take four plants in the country. The one in San Onofre, Monticello in Minnesota, the Public Power District One in Nebraska and Indian Point, and if you would prepare for this committee—because I think it would be terribly enlightening for everybody to run an analysis of what are the communications that all of the various government entities utilize."*

**Response 6:** FEMA completed the communications systems inventories, which were provided by the State and local affected counties of California, Nebraska, Minnesota and New York. The attached report reflects the data requested.

*Representative Sue W. Kelly, New York*

*Statement 1 and 2: "What have you done specifically to address the additional comments that the Witt report spoke about with the impact of a terrorist attack could have on your emergency plans? Have you done anything about the comment in the Witt report that speaks of the fact that high-population areas require different—have different requirements on an evacuation plan than otherwise?"*

**Response 1 and 2:** The Radiological Emergency Response Plans, which are prepared by the State and the risk and host counties, take the worst-case scenarios into consideration. FEMA is working with the NRC to conduct future exercises, for Indian Point and other facilities around the nation, that include a terrorist act or acts as the initiating event of a scenario. This will provide for a more complete understanding of this type of scenario. High population areas are reflected in the ETEs developed for each county. In the case of Indian Point, additional consideration of "shadow evacuation" was included directly in the computations to ensure that the impact of additional population would be considered. Planners are provided this information, along with specific recommendations for traffic control, to address potential problems that could result from a high volume evacuation.

*Statement 3: "Have you done anything to address that problem, the problems of communication between each other [communications that occur between the plant, the local officials and the county—the surrounding county officials] in these different areas? Is FEMA addressing the problems that we are having with allowing these first responders to any emergency to be able to talk with each other?"*

**Response 3:** FEMA recognizes the issue and will be working with the Department of Justice to review how the interoperability issues can be resolved. Funding has been made available in the FY 2003 Budget with DHS to initiate this effort and begin implementation. Under our Hazard Mitigation Grant Program, FEMA has also approved funding for the State for Indian Point for several communication and information systems. These include a Geographic Information System to allow for rapid identification, hand-held radios to augment present communications and a satellite teleconferencing system.

*Statement 4: "Were there any out-of-sequence activities or crediting used during the last exercise at Indian Point? Were the reception center activities done in real time or out of sequence?"*

**Response 4:** Several out-of-sequence exercise activities were demonstrated and evaluated as part of the 2002 exercise for Indian Point. At the request of the State and counties, out-of-sequence activities were demonstrations of facilities and procedures in addition to those that were demonstrated and evaluated at the time of the full-scale exercise. Out-of-sequence activities included school interviews, special population and bus company interviews, congregate care and reception centers, traffic control points, emergency worker personnel monitoring centers, and a medical services drill.

*Statement 5: "When was the last time that [an] unannounced exercise took place at Indian Point?"*

**Response 5:** On October 26, 1999, an unannounced, off hours drill for the affected counties at Indian Point was demonstrated.

*Statement 6: "Is it correct that FEMA is going to soon be taking public opinion on the proposed changes to the REP program?"*

**Response 6:** On February 27, 2003, FEMA published a Federal Register notice to extend the comment period for the extant planning guidance used by State and local governments for developing radiological emergency response plans in support of the licensing of commercial nuclear power plants. FEMA also uses the guidance to evaluate state and local plans. The public comment period for the operative planning guidance ended April 29, 2003. The State of New York and the four counties were notified of this opportunity to comment. The comments on the planning guidance are being considered and the guidance will be revised accordingly. In addition, in the next few weeks, FEMA will submit a Federal Register Notice for public comments on the exercise evaluation criteria and results-based methodology that was published in 2001. Once comments are received on the exercise evaluation criteria and methodology, they will be considered and the criteria will be modified as appropriate. The basic premise and Planning Standards of the program will remain; the referenced guidance provides information on how to apply the Planning Standards to emergency response plans and exercises.

